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Paper Head Protests Against Wagner Labor Bill

Alexander Thomson, President of Champion Coated Paper Co., and Head of Ohio and Hamilton Chambers of Commerce, Requests the President to Veto the Bill if Passed—H. I. Harriman, President of U. S. Chamber of Commerce, Says the Bill is Entirely Inequitable as Between Employer and Labor Organizations

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, March 26, 1934—Alexander Thomson, president of the Ohio Chamber of Commerce, head of the Hamilton Chamber of Commerce, and president of the Champion Coated Paper Company, late Thursday sent a telegram to President Franklin D. Roosevelt, protesting against the Wagner bill and requesting him to veto it in the event it is passed by the House or Senate.

It was a noteworthy fact that several other prominent industrialists, registered protests against the measure, including the head of the American Rolling Mills Company in Middletown.

Mr. Thomson's telegram to the President was as follows:

"As President of the Champion Coated Paper Company, Hamilton, Ohio, the largest coated paper manufacturers in the world, employing 2,500 employes, would respectfully urge that you use your influence against the passage of the Wagner bill as being against the eventual interest of both employers and employes.

"As president of the state of Ohio Chamber of Commerce, I presided at a meeting in Columbus last week where the protest of the Chamber against the Wagner bill was voted and a telegram forwarded to you personally. I believe you can perform no better service for the industrial life of the nation than to veto this bill if passed."

Says Wagner Bill Is Inequitable

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., March 28, 1934—"The Wagner labor union bill is entirely inequitable, as between the employer and the labor organizations", says Henry I. Harriman, president of the Chamber of Commerce of the United States in a statement on the bill to the membership of the organization.

"It could be construed as denying the employer the right to close his plant in a dispute, but would not discourage the strike."

Mr. Harriman says that it would provide the representatives of labor unions free access to the employee, but would deny the right of the employer to advise with his employee, preventing him even from discussing with the employee the type of labor organization that might be mutually satisfactory and advantageous to both.

"It would entirely prohibit employer contributions to employee organizations," he says, "except for payment of limited benefit.

"It would legalize the closed shop and do away with the open shop.

"It would refuse to recognize as employees men who of their own volition might take the place of men on strike and would deny a vote to these men in any determination of employee representation."

Mr. Harriman says further that "if union labor is to be given the unprecedented powers sought by this legislation and, if the bill is declared constitutional, the public will insist on counter legislation, to put labor unions under strict government regulation and to curb or even prohibit its activities."

Newsprint Authority to Meet April 3

WASHINGTON, D. C., March 28, 1934—Members of the newsprint code authority have been invited to come here on April 3 to confer with Divisional Administrator Major Barry of the NRA and Deputy Administrator W. W. Pickard in connection with the newsprint paper recommendations which were presented to NRA by the industry sometime ago and on which no action has been taken to date. It is hoped here that some kind of an agreement can be arrived at pleasing to both the newspaper publishers and the newsprint paper manufacturers.

Smith Paper Co. to Reopen Mill

LEE, Mass., March 19, 1934—The finishing room in the Niagara Mill of the Smith Paper Company is to be reopened, in the near future, to aid in the completion of orders which the company has received. It is thought that the finishing room in this mill will be kept open for at least four or five weeks, according to company officials. Approximately twenty-five former employees will be rehired, but it is not planned to take on any new employees.

Oxford Paper Co. Shows Gain

The Oxford Paper Company and Subsidiaries report as follows for 1933: Net income after depreciation and other charges, $168,852, equal to $1.99 a share on 84,482 preferred shares, compared with $11,416, or 13 cents a share, on 87,228 preferred shares in 1932.

Negotiations With Unions Continue in Canada

Meetings Between Individual Paper Mills and Union Representatives Regarding Wages and Conditions Taking Place in All Parts of Quebec and Ontario — Hope Expressed That Difficulties Will Be Straightened Out by May 1

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., March 26, 1934—Following on the recent meeting in Montreal of heads of the various labor unions in the pulp and paper industry in Canada and the United States; and executives of the companies, negotiations are now under way between the unions and the individual companies in Canada in respect to wages and conditions. Meetings are being arranged in all parts of Quebec and Ontario, and the hope is that all these will be concluded before May 1, when the trade agreements covering wages and working conditions will expire, by which date settlement of some kind, it is stated, will have to be reached.

The labor men who met in Montreal represented 10,000 Canadian employees and 6,000 United States newsprint workers, and their demands are: a six-hour day, a six-day week, and a 25 per cent increase in wages with a minimum wage of 45 cents an hour.

At the meetings here the company spokesmen neither rejected nor accepted the demands of the unions. Their attitude, however, was that in Canada it was too much to expect that wages actually in excess of those specified under the newsprint code of the NRA be paid, especially in view of the economic depression. There are two other complicating factors. One is that in view of the lower cost of production in Canada, as compared with the cost of production in the United States, there should be no attempt to enforce conditions here which would equalize the cost of production in the two countries, especially as the export of newsprint is the main factor in partly offsetting the very heavy unfavorable balance of trade suffered by Canada in its trading relations with the United States. This unfavorable balance has been much reduced in recent years, but it is still considerable. For instance, the total imports by Canada from the United States in the calendar year, 1933, were valued at $232,548,055, and the total exports of Canada to the United States was $148,529,831, the unfavorable balance being $84,018,224.

The other complicating factor is that a large number of the newsprint mills in Quebec are operated under open shop administration, this being largely due to unfortunate experiences of the workmen due to disruptions caused by international unions dominated by American heads of unions. A racial and religious factor also enters here. The majority of the workers in the mills in Quebec are French, and Roman Catholic and Catholic unions entirely independent of international unions are in operation.

It is no secret to say that the executives of the newsprint mills view with apprehension the demands of the unions, as expressed at the recent meeting in Montreal, that no workmen be paid less than 45 cents an hour, that all employees at present being paid less than 25 cents an hour be increased to 45 cents an hour, and, furthermore, that all others be granted a 25 per cent increase.

The union men who met here claim that considerable progress has been made in organizing the open shops, and that in some instances as high as 95 per cent organization has been effected. They anticipate that by the end of the summer, open shops will be practically abolished in the industry. Until union labor prevails throughout it is felt that negotiations between the union and non-union companies cannot be attempted.

The probabilities at present are that some sort of compromise will be effected. Meanwhile both sides appear confident that there will be no serious trouble in reaching an amicable agreement.

Newsprint Production

Newsprint production in Canada in February, at 174,447 tons, was the largest for any February since 1931. The gain for the month, in spite of fewer working days, was the largest so far, being up 48,837 tons or almost 39 per cent. In January the industry reported a gain of 47,835 tons over the same month last year.

Safeguarding Rights of Paper Companies

A matter of great importance to pulp and paper companies was raised in the Quebec Legislature during the past week by Premier Taschereau, who supported a bill to safeguard pulp and paper companies by making their leases of pulp limits permanent. He remarked:

"Unless it has some guarantee of security, what company will build a pulp or paper mill in the province? The public would not buy the company's bonds or stocks unless the company had a guarantee.

"Can we possibly afford to make an exception in Quebec of a rule that applies in every other province?" Premier Taschereau demanded. "I ask not only this House but the Province of Quebec to agree with me in this."

The bill was sponsored by the Hon Honore Mercier, Minister of Lands and Forests, who explained that it provides for the automatic renewal of the yearly leases of pulp and paper companies on the condition all obligations have been met.

After long discussion progress was reported on the resolutions pertaining to the bill.

More Power Installed

The Shawinigan Water and Power Company, which supplies hydro-electric power to the various large pulp and paper concerns in the St. Lawrence Valley, has just put into operation the second of the four units of 40,000 h.p. each being installed at the Rapide Blanc development on the St. Maurice River.

It is expected that the other two units will be completed shortly; one in the early part of April and the second by the middle of May. By that time the whole four units will be running to their full capacity of 160,000 h.p.

Completion of the installation of the first two units increases the present capacity of Shawinigan's installed capacity to 809,200 h.p. With the other two brought into operation, the company will be able to produce 889,200 h.p.

Buys Huntington Paper Box Co.

[FROM OUR REGULAR CORRESPONDENT]

HUNTINGTON, Ind., March 28, 1934—Ray Woodbeck of this city has purchased the building, real estate, equipment and stock of the bankrupt Huntington Paper Box Company here. The sale was ordered by the referee in bankruptcy. Mr. Woodbeck will continue operation of the plant.

Badger Paper Mills Profits Increase Materially

Report Made to Stockholders by President E. A. Meyer Shows Net Income for 1933 Was $105,799, Compared With $1,573 for Preceding Calendar Year—Current Assets Totalled $705,548, and Liabilities $141,378 on December 31, 1933

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., March 26, 1934—Net profits of the Badger Paper Mills, Inc., Peshtigo, Wis., showed a gratifying increase during 1933, according to the report made to stockholders by E. A. Meyer, president. The net income was $105,799, as compared with $1,573 for the preceding calendar year.

Regular quarterly dividends amounting to $42,141 were paid and the balance was added to surplus, bringing the account up to $221,350. First mortgage bonds totalling $21,500 were retired during the year, reducing the original outstanding issue from $400,000 to $228,500.

As of December 31, 1933, current assets totalled $705,548 and current and accrued liabilities, $141,378, a ratio of five to one.

Tomahawk Reorganization Plans

About 54 per cent of the first mortgage bonds of the Tomahawk Kraft Paper Company, Tomohawk, Wis., have been deposited with the trustees in order to bring about the proposed reorganization of the corporate structure. The time for depositing expires April 20.

After abandoning a proposal to consolidate with the Mosinee Paper Mills Company, of Mosinee, Wis., the protective committee of the bondholders decided upon a new capitalization plan. The present proposal is to organize a new corporation to take over the assets and assume the liabilities of the old company in exchange for part of its capital stock.

The old company and the protective committee for holders of second mortgage bonds are to deposit the issued capital stock of the new company and the secondary obligations with five trustees who will vote the stock and hold secondary obligations for transfer to the first mortgage committee if there is a default. Two of the trustees would be selected by the committee for the secondary mortgage and three by the first mortgage group.

The program calls for building up working capital and after having done this to devote profits to payment of interest due after October 1, 1936, on first mortgage bonds and then on accrued interest on this issue. Following this, income is to be paid on the secondary mortgage issue and for retiring the first lien bonds.

Pulpwood Supply Assured

Wisconsin's situation as to pulpwood supply is revealed by the Wisconsin Conservation Commission in a report made to Henry Wallace, United States Secretary of Agriculture, who seeks data on the available pulpwood in view of legislation pending in Congress.

Figures available indicate that Wisconsin's total stand of timber is 44,500,000 cords, while the annual commercial consumption for all uses is 2,090,073 cords. At this rate, without any reforestation, Wisconsin could maintain its own supply for twenty years.

Present reforestation and forest protection activities, however, assure manufacturers that the supply of pulpwood will not be exhausted at the end of this 20-year period, but that the available amount will be increased.

The state has developed its commercial forestry activity in cooperation with private enterprises endeavoring to safeguard their future pulpwood repuirements by establishing their own forestry projects. In some cases Wisconsin's paper mills, through holdings both outside and within the state, will be self-supporting for forty years, and there is assurance of a plentiful supply long before that time.

Since the conservation department began the planting of trees in 1911, there have been planted 14,209,600 trees on 14,000 acres up to and including 1931. In 1932 an increased program, calling for the planting of 10,000,000 trees on 10,000 acres each year, was started. Wisconsin is now planting yearly as many trees as were set out in the 20-year period from 1911 to 1931.

News of the Industry

In a report issued by Mayor B. W. Fargo, of Kaukauna, Wis., it is shown that financing furnished out of the surplus of the Kaukauna municipal electric plant made it possible for the Thilmany Pulp and Paper Company to move its bag plant from Waukegan, Ill., to Kaukauna, instead of using its abandoned tissue mill at Appleton, Wis. The utility paid $40,000 for the erection of the bag plant when the move was contemplated, and sold the building to the Thilmany company on a basis of annual payments of $4,000 over a period of ten years. One $4,000 payment has been made.

The Moloch Foundry and Machine Company was also helped by the Kaukauna municipal utility through deferring the payment of $21,678 for power bills. The city recognized the value of payrolls of $350,000 during the period of this credit extension and has considered this financing as well as that of the Thilmany company a good investment for the future.

Bids for deepening and widening the harbor channel at Green Bay, Wis., have been rejected for the second time by Lieut-Col. Harry M. Trippe, chief district army engineer at Milwaukee, Wis. The figures are considered too high, and a third set of bids probably will be called for, since the War Department does not consider itself equipped to do the work itself. The army engineers' estimate of the cost was $516,000, but the low bid of the Great Lakes Dredge and Dock Company, Chicago, was $764,000. The government hopes to get the work started this summer so as to improve docking facilities for heavy shipping at Green Bay, where large supplies of pulpwood are being imported in foreign ships.

Several Wisconsin mills were visited recently by Erik F. Kruse, paper mill technician and mechanical engineer of Copenhagen, Denmark, who is making a two months' tour of the United States. He is associated with the United Paper Company, operating five mills and eighteen paper machines and the only company of its kind in Denmark .

Announcement is made of the death last week of Mrs. Annetta Salz Wertheimer, wife of Monroe A. Wertheimer, president of the Thilmany Pulp and Paper Company, Kaukauna, Wis. She failed to survive an operation performed at Presbyterian Hospital, Chicago. Mr. and Mrs. Wertheimer came to Kaukauna in 1901, when the connection with the Thilmany company began. Besides the widower, she is survived by one son, Robert, of Longview, Wash., and one daughter, Mildred, New York City. The body was cremated in Chicago.

Demand for Paper Fairly Satisfactory in Boston

Good Volume of Business Transacted in Fine Paper Market — Wrapping Paper Trading Well Up to Average — Box Board Division Continues Fairly Steady — Paper Stock Section Generally Quiet, With Quotations Little Changed

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., March 26, 1934—A fair demand for paper in Boston and vicinity prevailed during the week under review. In the fine paper division, some found a very good volume of business, with printers placing orders, and users of bonds and ledgers giving their share. Advertising is developing to at least a moderate extent. In wrapping paper an average amount of business was transacted. Collections, however, were reported as poor. Box board continued steady at the same prices, although the demand was rather spotty.

"March has not been a bad month, compared with January and February," it was stated at a paper stock house. The last week, however, was quiet, with prices remaining unchanged. Mills were said in the trade to have rather plentiful stocks on hand, with a tendency to reduce the supply before beginning to buy more. The opinion is expressed that packers who have been holding off will be obliged to sell for less money than they are asking now—that mills will not pay current prices. No. 1 mixed papers continued at .20 to .25 f. o. b. Boston, and old newspapers at .35 to .40. There was no change in manila rope, with foreign still quoted at $2.25 and domestic at $2.50, figures which mills are willing to pay. There was no feature in either new or old domestic rags and little or no activity in foreign rags.

Spaulding Addresses Paper Merchants

The Wrapping Paper Division of the New England Paper Merchants Association held a meeting at the Boston Chamber of Commerce Tuesday, attended by forty members, at which "Chet" Spaulding, assistant secretary of the National Paper Trade Association, gave a "lightning" talk. F. Bendel Tracy, president of the New England Paper Merchants Association, presided.

Direct Mail Display

A sales meeting of the Storrs & Bement Company was held at the office of the company Saturday morning in regard to Warren advertising papers, at which Robert Elliott, of the S. D. Warren Company, spoke. General Manager John H. Brewer, of the Storrs & Bement Company, presided.

Demonstrations of the fifty best direct mail campaigns of the direct mail advertisers for 1933 are displayed at the office of the Storrs & Bement Company.

News of the Trade

The regular sales meeting of Knight, Allen & Clark, Inc., was held at the office of the company Saturday.

J. L. Boynton has been transferred from the New York office to the New England office of the Brown Company here, and will act as travelling salesman, contacting the New England trade.

John L. Munro, of Munro & Church, box board dealers, who was presented with a purse by the Metropolitan Box Manufacturers Association for a trip to Bermuda, sailed Friday, accompanied by his wife and daughter.

Leon M. Poore, sales manager for John Carter & Co., Inc., has returned from a trip to Florida.

William Mann, salesman for the Baird & Bartlett Company, box board dealers, has returned from a trip to Mexico and the Southwest. While in Mexico City, he witnessed a bullfight.

Those from Boston and vicinity who attended the annual meeting of the National Association of Waste Material Dealers in New York last week, included Walter Simonds and Harry Woodward, of Train, Smith & Co.; Horace Binney Sargent, of E. Butterworth & Co., Inc.; Richard G. Graham, of James J. Graham Paper Company, Cambridge, Mass.; David Feinberg, of David Feinberg & Co.; Arthur Feinberg and Max Feinberg, of the Beacon Waste Supply Company; Max Tushins, of M. M. Tushins; and Mr. Krasnow, of the Yoffe, Krasnow Company.

Leo Saslaw, 180 Columbia Road, Dorchester, d. b. a. Merchants Paper Company, 55 Kilby street, and 10 Thacher street, Boston, has filed a voluntary petition in bankruptcy. Liabilities are given as $6,880; assets, $885. Largest creditors: Unsecured—American Tissue Mills, Holyoke, $1,141; Erving Paper Mills, Erving, Mass., $1,220; Sealright Company, Boston, $432; W. H. Claflin & Co., Boston, $393; Robert A. Browne, Inc., Boston, $315; Stimpson & Co., Inc., Boston, $312.

Weather Interferes With Indianapolis Demand

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., March 28, 1934—Paper demand in this territory likely would become considerably more normal if weather conditions would improve. This winter has been just one blizzard after another and the last, coming so late in the season, hurt business that was just beginning to think of spring. In spite of all this, however, volume during this year so far has been ahead of last year and this month will be far ahead of a year ago when the bank moratoria stopped everything for a time.

Balmy weather the first of last week caused an influx of inquiries concerning summer specialties, but the cold weather at the end halted any possible sales. Dealers in these lines are inclined to put off until the last minute buying which must be done before spring arrives. Stocks of these specialties in this area are said to be adequate, at least for the first rush of orders. The first buying must, of necessity be large for there was little or no carry-over. Quite a bit of Easter business was done.

The fine paper market is moving but slowly and the same situation is reported in Kraft and the paper board market. Prices are being held, however, and no immediate readjustments are contemplated. The newsprint demand seems a trifle heavier than it has been during this season in former years. The approach of Easter, of course, has stimulated advertising in many lines, particularly the apparel lines and this has been reflected in larger papers. Paper stock men are none too enthusiastic concerning mill demand, most of the mills buying sparingly for the last fortnight. However, the price level is higher than it was particularly in the finer grades of paper stock and rags.

Officials have begun checking, on a State-wide basis, complaints against code regulations in all lines of business and from preliminary reports, the paper trade is making every effort to comply with regulations. At least complaints have been lower than the average.

Chicago Paper Market Shows Slight Improvement

Demand for Various Standard Grades of Paper Settles Down to Normal — Fine Paper Section Exhibits Stronger Undertone — Kraft Paper Division Remains Practically Unchanged — Request for Ground Wood Papers Broadens.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., March, 26, 1934—The Chicago paper market registered a slight improvement during the past week, lines directly affected by the aprpoach of Spring showing to the best advantage. Demand has evidently settled down to a normal state following the purchase of large quantities of paper by buyers who wished to take advantage of the reductions offered by large quantity purchases.

Certain lines are faring better than others, fine papers showing perhaps the most optimistic situation. Book representatives here reported some hesitancy due to the reported uncertainty as to the next price move in their line. The kraft market remained about the same, with prices firm and demand similar to last week. Ground woods had a better week of it, demand broadening out in slightly more encouraging manner. The newsprint situation still offered grounds for worry, according to local reports. The paper board market was reported healthy, with demand broadening out as new uses for this type of product are being uncovered. The waste paper market changed only slightly during the week.

Work of Paper Foundation

There are a number of interesting items in the complete report recently issued by the Paper Foundation, which not only presents the entire purpose of the forthcoming paper display at "A Century of Progress Exposition" in Chicago, but uncovers some interesting facts concerning the initial venture in 1933.

Other items contained in the six-page release from Paper Foundation headquarters, list 1934 exhibit features as follows: "House of paper"; mechanical operating exhibits, including possibly a napkin-making machine; a working demonstration of how paper is made, and twenty outstanding floor exhibits of specific paper products. The contract specimens attached to the informative material show that exhibitors who pioneered in the initial venture last summer will be given a twenty per cent discount on exhibit costs in 1934. Floor unit space is listed at $1,000, less 20 per cent for cash. Cabinet unit space is listed at $300, with 20 per cent cash discount. Both unit space prices are subject to the above-mentioned reduction for participation in 1933.

Paper Association Plans Banquet

The Chicago Paper Association is completing plans for a big banquet and get-together of members, salesmen and distributors to be held in the near future for the purpose of clearly setting forth the program of the Code Authority for the Paper Distributors trade. The purpose, program and organization of the authority will be presented at that time. While the date has not been definitely set, a committee, headed by William Shapland, of the Fred Rentz Paper Company, is busily making preparations. Others on the committee are Leo S. Altholz, Inlander-Steindler Paper Company; and William Gaul, of Gaul & Ingalls.

M. A. McNulty, president of the Chicago Paper Association, also recently announced the personnel of the important Commodity Committees for the next twelve months. Almost without exception the personnel is the same as last year, with the following chairmen: Bags, Leo S. Altholz; Corrugated and Chip Board, M. A. McNulty, McNulty Paper and Twine Corporation; Gummed Tape, Norman Stone, Earl Beier Company; Kraft Paper, Leo S. Altholz; Sulphite Paper (Butchers'), William Chukerman, J. Chukerman Sons; Tissue Paper, James S. Danehy, Schwarz Paper Company; Toilet Paper, 2,000 sheets and towels, J. D. H. Murphy, Commonwealth Paper Company; Twine, John Daily, Pilcher-Hamilton-Daily Company; and Specialties, Henry Thoms, Peerless Paper Company. These committees have the important task of contacting with mills in all matters dealing with these various commodities as they affect Chicago members of the association.

News of the Trade

Members of the Chicago paper industry have been signally honored in the 1934 committee appointments of the Chicago Association of Commerce. The committee directory recently issued from the trade organization contains the following representation from the paper industry: Division Committees, Box Board Products, J. P. Brunt, Brunt & Co., chairman; E. P. Lannan, Central Fibre Products Company, vice-chairman; George J. Kroeck, Kroeck Paper Box Company; R. H. Ritchie, W. C. Ritchie & Co.; H. Schwenneke, Eureka Paper Box Company. Paper and Envelopes Division, Hamilton Vose, Jr., Berkshire Papers, Inc., chairman; James A. Greenlee, Kalamazoo Vegetable Parchment Company, vice-chairman; Arthur E. Chapman, Central Bag and Burlap Company; Gordon M. Davie, Vortex Cup Company; and P. McGillivray, Lake Shore Paper and Twine Company. W. W. Fox, Pilcher-Hamilton-Daily Company, is listed as a member of the Illinois committee of the association.

A former representative of the Capitol City Paper Company of Springfield, Ill., R. E. Keller, has announced the opening of his own firm with headquarters at Alton, Ill. Mr. Keller and his sales force will cover the important industrial district in the vicinity of St. Louis. A representative line of wrapping papers and specialties will be carried.

A recent new arrival in Chicago paper circles is the Bennington Wax Paper Company and the Ben Mont Fancy Papers, Inc., located in Bennington, Vt., which have opened Chicago offices on the fifteenth floor of the Merchandise Mart, 222 North Bank Drive. The Chicago office will reach out into fifteen states in the middle-west with its line of waxed papers, tissues and other products. Theodore Lax is in charge of the newly opened office.

Algonquin to Continue On Full Time

[FROM OUR REGULAR CORRESPONDENT]

OGDENSBURG, N. Y., March 26, 1934—Officials of the Algonquin Paper Company stated here this week that operations would be conducted on full time during the remainder of the year. Rumors have been rampant for some time that a curtailment in production would be necessary despite an announcement made several weeks ago that conditions were good. F. A. Augsbury, president, declared that contracts had been made for the entire output and denied a recent report that operations would be suspended when the existing stock of 40,000 cords of wood was utilized. He looks for an improvement in conditions in the paper industry next week.

Ontario's Precautions Against Pulpwood Strikes

Measure Introduced in Legislature Provides for Appointments of Inspectors to Investigate Pulpwood and Lumber Camp Conditions—Employees' Wages and Working Hours Will be Subject of Inquiry and Quarters Will be Scrutinized

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., March 26, 1934—As a precaution against conditions in the pulpwood camps of Northern Ontario which caused a series of strikes last Fall, the Hon. William Finlayson, Minister of Lands and Forests, introduced a bill in the Ontario Legislature this week, which provides for the appointment of inspectors and assistant inspectors and gives them powers to investigate every phase of the pulpwood and lumber camps in relation to the workers. To be known as the Workmen's Employment Act, the legislation provides that it shall be the duty of inspectors who shall be persons performing other duties in the forest department, to investigate all phases of the arrangement under which an operator enjoys the right to cut and remove Crown pulpwood and timber. Any inquiry will take into account not only wages of employees, working hours and methods of paying wages, but will delve into the amount and wholesomeness of the food, no matter under what agreement it is supplied to the men. The prices paid for meals, clothing and other supplies will also come within the scope of any investigation ordered by the department. Nor will the operator be permitted to cut into wages by excessive charges for medical, dental, transportation and other kindred services or by penalties or assessments of various kinds against wages. Inspectors will have full charge to look into these. The quarters provided for workers will also be subject to scrutiny by inspectors, including the sanitary conditions of kitchens, dining quarters, etc. The inspector will have all the powers of a county court judge in conducting an inquiry, except that of committing to jail for contempt. He will be permitted to summon persons to give evidence and require the production of any necessary documents. Refusal of a person to appear would be met by a court order to compel attendance.

Made Paper in Toronto in 1827

Some years before the incorporation of the City of Toronto, paper-making industries were started in the Don Valley, adjacent to the city. T. Linsay Crossley, pulp and paper engineer, stated this fact in reviewing the history of the industry and others which used the water power of the Don following the year 1827 in an address before the York Pioneers. Mr. Crossley reviewed the industrial adventures of the Eastwoods, the Helliwells, the Taylors, who were among the founders of the paper-making plants in Ontario. He exhibited samples of paper now being made near the site of the early industries. He referred to the use of Ontario's first newsprint by the *Globe* in its first issue, and to the *Colonial Advocate*, whose owner, William Lyon Mackenzie, questioned the quality of paper made by Eastwood.

Paper Box Company's Earnings Gain

Increased volume of business and further reductions in operating costs are stated to be responsible for increased earnings reported for Corrugated Paper Box Co., Toronto, in 1933. After provision for depreciation, the company earned $15,747, or $1.96 per share on the 8,034 shares of $100 par value preferred stock outstanding. This compares with a deficit of $17,416 in 1932 and a deficit of $71,297 in 1931. Working capital position was strengthened as a result of improved earnings and the ratio of current assets to current liabilities was increased to 5.11 to 1 from 3.22 to 1. Cash is up to $10,291 from $1,667; accounts receivable are up to $93,169 from $80,513, and inventories to $115,198 from $93,706. Bank loan has been reduced to $17,770 from $32,405, while accounts payable are slightly higher at $24,135. Fixed assets are shown at $1,125,903 before deduction of depreciation reserve which now amounts to $257,248. Mortgage payable on the Winnipeg plant of Hilton Brothers, Ltd., has been reduced to $8,000 from $14,000. Organization and preliminary expense is reduced by $1,655 to $51,911. Investments are shown at $8,595. In addition to the preferred shares there are 47,000 shares of no par common stock including 1,245 shares unpaid.

Abitibi Official Returns to Toronto

B. F. Avery, who has been representing the Abitibi Power and Paper Company, in the woods department at Sault Ste. Marie, Ont., has been re-transferred to Toronto and has entered upon his duties in the woods department at the head office. Mr. Avery is an old official of the Spanish River Pulp and Paper Mills Company and was located in Toronto shortly after Abitibi took over the Spanish River Company.

Selling Paper to South America

Exports of Canadian newsprint through the port of Saint John, N. B., since January 1 already have exceeded by more than 300 per cent, total newsprint shipments through there in the calendar year 1933, the Saint John Harbor Commission reports. In 1933, only 6,172 tons of newsprint went through the port. Approximately 25,000 tons have gone from there in the last ten weeks, much of it to South America. Within the next few weeks at least another 10,000 tons will go from Saint John to South America. Exports of newsprint from Saint John to South America were wholly unexpected at the outset of the winter shipping season. Already eight additional sailings from the port have resulted and there will be three or four more before the season ends.

Joa Offers Paper Industry Broad Service

Incorporated on February 15, 1934, Curt G. Joa, Inc., of Manitowoc, Wis., offers paper and paper products manufacturers a service of signal value along both engineering and mechanical lines.

For four years prior to its incorporation the business of this organization was carried on as a division of the Invincible Metal Furniture Company, of Manitowoc. The president, Curt G. Joa, has a record of outstanding accomplishment as an industrial and mechanical engineer.

While it is engaged in the manufacture of a number of standardized machines, such as sanitary napkin machines, toilet roll labelling and wrapping machines, and table napkin packaging machines, the Joa Corporation also furnishes an underlying engineering service of especial value along the lines of chemical and mechanical research, and the development of special machinery to handle operations or overcome problems which come up in the paper products field. It is also serving such other industries as cotton mills, metal products manufacturers, etc., and is equipped to furnish metal dies and screw machine products.

Philadelphia Paper Industry Expanding Rapidly

Production of Various Grades of Paper Stimulated on All Sides—Quotations Rule Far Above Low Levels Prevailing Early in 1933—All Branches Anticipate Further Benefits from Codes, Including Elimination of Price Cutting

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., March 26, 1934—Advent of Easter is looked forward to with considerable interest by the paper dealers as giving an evidence of a permanent trend of the market, and, generally speaking, the paper industry here has reached a more rapid rate of expansion. Production has been stimulated on all sides as well as prices far above the low levels prevailing in 1933, and all branches are to be benefited further by the codes, which promise elimination of the price-cutting practice indulged in a few years back. The immense betterment which the paper stock trade enjoyed last summer has been on the wane for some time and those prominent in the business are visibly concerned as to the outcome of this lull.

Association Activities

At the headquarters of the Philadelphia Paper Trade Association, there was held during the week a meeting of the Commodity Committee chairmen, who participated in a round table discussion of plans for the furtherance of ideas and suggestions to be embodied in the activities of their committee.

The Philadelphia Paper and Cordage Association, under the able direction of Leslie C. Bartlett, of the Eastern Paper Company, is making plans for a dinner outing and all-day sports event early in June.

During the week a meeting of the Banquet Committee of the Paper Stock Merchants will be held at the Hotel Lorraine.

Jessup & Moore Reorganization

Eugene W. Fry and T. McKeen Chidsey have been appointed Receivers by the United States District Court for the Jessup & Moore Paper Company, this being the first step in the reorganization of the company's affairs. In due course of time the reorganization plan will be presented to the Court for its approval. When the plan is adopted, the receivership will be promptly vacated, and it is felt that under a revised capital structure and with substantial working capital, operations will be continued to the entire satisfaction of their trade creditors and customers.

The plan provides that all trade or merchandise creditors shall be paid 100 per cent in cash, and the bank-creditors have so agreed. Under the decree of the Court, the business will continue to be operated with the same personnel and under the same policies which have always been maintained. Continued support and cooperation during the intervening weeks pending the completion of the reorganization, are asked by the Jessup & Moore Paper Company, particularly since it has come to their notice that certain of their competitors have recently circulated unfavorable rumors concerning the company's affairs and its future prospects.

Benjamin Franklin Memorial Opened

Benjamin Franklin—immortal American citizen whose teachings, foundations and institutions live on forever in the hearts and minds of all men—takes on new glamour, new immortality, with the opening of his newest and greatest Memorial on the Parkway at 20th street. Within this remarkable structure—housed under one roof—is a collection of Scientific creations that enthrall the profound student as readily as the average layman, and of particular interest to those in the paper trade is what is conceded to be the first and only papermaking machine model built to scale in this country, and is operated daily by a skilled and experienced papermaker in the person of A. K. Shearer, who has had thirty-five years' experience as a papermaker, twenty-five of which were spent with the Dill & Collins Company. This model papermaking machine is built to scale and is designed to operate 24 hours per day on general papers. It is mounted on a table 18 feet long and about 5 feet wide; the machine itself makes sheets of paper 8¼ inch wide, and has a capacity of 5 feet of paper per minute. This table holds, above and below it, full equipment for the making of paper, and the motors and switches for the operation of all units on it. The table is built of steel which is covered with oak; the top side of the table is also covered with battleship linoleum. The machine has a wire 11 inches wide and 68 inches long. The mesh is 80, and the machine can produce 3 to 4 pounds of paper per hour.

Facing the table on the front side of the little machine, one sees at the extreme left the initial step in the making of paper—a small beater which has a capacity of ¾ of a pound. From this unit the stock is dropped into 2 stuff chests which are attached to the underside of the table. Heavy glass ports above each chest permit constant inspection of the electrically lighted chests, and a motor driven pump brings the stock from the stuff chests to the screen and the flow box, a regular adjustable copper-lined flow box equipped with a plug for rapid emptying. The machine has one sluice through which the stock flows into the wire of this miniature shaking Fourdrinier, which is equipped with suction boxes, Nash vacuum pump, vacuum gauge, dandy roll jacketed couch and two presses; it has a rubber press roll. The deckle straps are ⅜ inches square. There are 2 dandy rolls for the machine, one of which has on it the "Franklin Institute" watermark; a tiny shower pipe operates too; piping on the machine is brass. Lost water and drippage are quickly and conveniently carried off to the sewer through the slots beneath the machine and through convenient plugs around the table. The entire table is edged with a brass rail to prevent slopping and drippage beyond the table. The machine has 8 driers, each 6 inches in diameter which are electrically treated under thermostatic control. There are top and bottom felts and the machine is equipped with spring rolls, guide rolls, stretch rolls. The press felts are 46 inches long.

At the dry end of the machine are six-roll stack of calenders and a reel. Beneath and attached to the table is a complete system of piping for fresh water. Variable speed electric motors drive the paper machine; all drive units are worm geared with cones and belts. The line shafting is held by SKF bearings; oilless and anti-friction bearings are used throughout the machine and its auxiliary equipment. The entire outfit is wired through conduits for electricity to conform with the best standards set by the fire underwriters. Operation of the machine and other equipment can be controlled by push buttons and switches from either the front or back sides.

The table containing the papermaking machine and its aiding units was shipped by the makers, Rice, Barton &

(*Continued on page* 23)

Boston Paper Trade Association's Annual Meeting

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., March 26, 1934—At the well attended annual meeting and dinner of the Boston Paper Trade Association, held at the Algonquin Club, with 115 present, Wednesday evening, Fred W. Main was elected president; F. Bendel Tracy first vice-president, and Walter J. Raybold, second vice-president. T. Charles Casey and John L. Hobson were re-elected treasurer and secretary, respectively. Elected to the executive committee were Norman H. Harrower, Charles J. Proctor and W. Edwin Porter, Jr. The reports of the secretary and treasurer, respectively, showed that, as of the 17th of March, the membership totalled 198, and the treasury held $3,660 in cash and bonds.

As usual, the meeting was characterized by much good fellowship. Preceding the meeting, there was a reception.

General Needham Discusses Crime Situation

Following the dinner and business session, General Daniel Needham, Massachusetts Commissioner of Public Safety, portrayed the crime situation, its causes and its cures.

Gen. Needham said the amount of crime did not interest him but what is really important is the type of crime that the police have to contend with. He then cited the recent five bank hold-ups in the state with particular reference to the Needham Trust Company case where two police officers were slain by the gangsters.

He said there were four contributing factors to crime today. Speed of the modern automobile, the expert use of modern fire arms, the comparative youth of the criminal, and organization.

Dwelling on the first aspect he said the speed of the automobile today has revolutionized the whole situation by taking away the local aspect of crime. The automobile now makes it possible for easy escape not only to other towns or cities but to other states in a comparatively short time after the crime has been committed.

On the expert use of modern fire-arms he pointed out the target practice which criminals engage in, whereas in few cities or towns of the state are the officers permitted to use ammunition for target practice with the result that when forced to use their guns they are at a distinct disadvantage. The sub-machine gun and the sawed-off shotgun which can be procured from any sporting goods store without a license, are used by most bandits, he said, and in many instances, particularly in the small town, there is no such a thing as a sub-machine gun in the police department equipment.

The average age of the criminal today, Gen. Needham said, is 19 to 21 years and this youth embodies a rashness, boldness and utter disregard of human life. The combination of the auto sub-machine gun and youth certainly constitute a difficult task for the policeman on the street.

Criminal Organizations

Referring to the fourth aspect of crime, namely organization, he said this was handed down from the prohibition era. Bootlegging required organization and organization was the means of bringing criminals together in a common enterprise. With the advent of repeal and the end of easy big money the criminal was not content to enter C.C.C. camps or the like but joined some organization, such as bank robbers, where easy money was continued.

General Needham brought out these points to convey to his listeners the need of co-ordination of police activities under one head so that the local aspect could be removed from any crime and the apprehension of criminals made so certain that they would soon be driven into some form of law-abiding endeavor.

Modern Equipment Needed

Referring to radio, he declared a city or town without radio equipped police cars has practically no police department at all, and he brought in that less than 50 per cent of the police departments in and around greater Boston were radio equipped.

Relative to modern equipment he illustrated the case of a city in southern Massachusetts with a police department of 120 men. The department, he said, did possess one sub-machine gun and one sawed-off shot gun. These were not carried in a police cruising car but were kept at the station under lock and key. Furthermore upon investigation he learned that not one man in the entire force had ever been permitted to handle or learn how to handle these guns. In another town he examined the guns of several officers and found that in one examination the guns of three policemen had not been cleaned or the ammunition changed in three years. He brought these points out to emphasize the need of bringing the police of the state under a centralized agency where uniform training and uniform equipment would soon make the officer in the smallest hamlet just as efficient in the handling of crime as the detective in the large city.

Those Who Attended

Those present included the following:

Arnold G. Allen, George D. Allen, George C. Andrew, John A. Andrew, S. B. Andrew, Henry C. Barr, S. W. Bartlett, Arthur E. Bell, E. D. Bement, Henry F. Bigelow, W. W. Binford, J. H. Brewer, Arthur E. Brigham, Chas. J. Brown, J. F. Burke, Arthur M. Burr, C. A. Burrell, Matthew O. Byrne, James C. Campbell, Alfred T. Carter, R. B. Case, Charles T. Casey, Howard Chase, Lewis L. Claflin, Nathan S. Clark, Harry M. Crammer, E. L. Cummings, Henry Curtis, R. L. Day, S. D. De Forest, C. H. Dodge, J. J. Dwyer, W. Robt. Ely, Irving L. Esleeck, Chas. A. Esty, C. W. Field, P. S. Fiske, Chas. I. Foster, H. C. Fowler, Arthur W. Frank, Thos. Casey Green, Courtlandt B. Griffin, John R. Halkyard, Arthur C. Hall, Clifton S. Hall, Frank D. Hatch, Edgar P. Hay, Wm. H. Hilton, Arthur L. Hobson, John L. Hobson, Walker B. Holmes, Ralph Humes, H. A. Hurlbert, John E. A. Hussey, Fred B. Korbel, E. H. Little, Hubert W. Lockhardt, E. R. Lyman, M. L. Madden, Fred W. Main, Wm. M. Marshall, Wm. J. McLellan, Karl F. Miller, H. A. Moses, Horace A. Moses, W. N. Munroe, General Needham, Chas. W. Nelson, C. E. Newell, Robert O'Neil, Maurice A. Park, A. E. Pearson, Edward W. Pierce, T. E. Pierce, Richard F. Piper, Wm. E. Porter, Walter M. Pratt, Charles S. Proctor, Wm. J. Raybold, Ernest S. Reid, C. E. Rice, John E. Roach, Ralph Robinson, Wm. Ross, Wm. C. Ross, Walter B. Sheehan, E. T. Simpson, Albert R. Smith, D. R. Smith, M. K. Smith, Wm. S. Smock, Jos. D. Snell, B. C. Spaulding, Wm. N. Stetson, Jr., Edw. H. Stone, R. M. Stone, George Stuhr, E. H. Sussenguth, J. G. Swift, J. Gilbert Swift, Jr., Roger Taft, A. A. Tanyane, Chas. W. Townsend, F. Bendel Tracy, R. P. Teele, Glen Underwood, Harold C. Upham, John B. Van Horn, John Vivian, V. R. Walden, Rolf G. Westad, Ralph White, E. L. Wood, Emery M. Wright, Emory Wright, P. D. Wyman, W. Gardner Very, Chas. A. Young, J. C. Young and Leon H. Young.

Delaware Valley TAPPI Discusses Calenders

The Delaware Valley Section of the Technical Association of the Pulp and Paper Industry met at the Engineers Club, Philadelphia, Pa., Friday evening, March 23rd. G. E. Landt presided as chairman.

A committee to consider plans for an out-of-doors program in June was appointed. This consists of H. P. Cannon, C. M. Connor and J. Carl Schmidt.

A nominating committee to report at the April meeting was appointed, consisting of D. Manson Sutherland, Jr., chairman; Jacob Edge, C. E. Peterson, Charles Shubert and A. W. Wickham.

Pressures and Nip Areas

C. E. Peterson of the Riegel Paper Corporation, Riegelsville, N. J., was the first speaker and talked on the Determination of Pressures and Nip Areas in the Calender Stack.

Reference was made to papers published a few years ago by James Strachan and O. Gunther on the effect of steel rolls on paper.

The instantaneous pressure of a calender roll on paper passing through is a function of the thickness of the paper, compressibility of the paper, the diameter of the roll, and the total line pressure of the upper roll.

Strachan pointed out that the efficiency of calendering is low considering the power applied, steam used, and high cost of maintaining smooth surface.

Supercalendering

De Haven Butterworth of the Butterworth Machine Company, read a paper on Supercalenders.

When a large diameter roll is used the nip area changes with a corresponding difference in pressure per square inch and the finish to be expected will be different than it will be for smaller diameter rolls.

The need for great care for the paper roll was emphasized. When such rolls are used for a long time the surface will get hard. The hardness will increase more slowly if these rolls are wetted from time to time.

In coated paper rolls cotton rather than paper is used for roll construction. The ends of cotton rolls have a tendency to swell since the paper does not usually use the entire roll length. The ends should be kept sanded down at all times.

Large diameter rolls will do a better finishing job than smaller diameter rolls.

When a roll marks up in operation it is usually too hard.

Calender Drives

The third speaker was G. W. Roberts of the General Electric Company, who represented F. W. Winslow, who was unable to be present. A very heavy load is put on driving equipment when a calender is started; this load dropping off immediately after the machine is started. Paper must be threaded through the stack at slow speed. The driving equipment must be variable in speed and when the paper breaks, the calender must be able to stop quickly. The speaker described a number of systems of calender drive to meet the aforementioned conditions.

C. M. Connor asked Mr. Butterworth what should be considered the limit of hardness for good operation. Mr. Butterworth replied that a reading of 40 would be too hard. The paper roll should be moistened from time to time with warm water.

Mr. Roslund asked about the advantage of using antifriction bearings. Mr. Butterworth stated that the power requirement is cut in half when antifricion bearings are used.

When asked about the advantages of the open type of calender frame, Mr. Butterworth indicated rolls can be most easily removed from this type of frame.

As to whether the drive should be on the bottom roll, he felt that in the paper industry this roll is usually driven because it is the largest and provided the best frictional contact.

Mr. Butterworth pointed out that a helical or double helical gear will probably give the best action to the rolls. When some drives are used action sometimes produces corrugations in the rolls.

Those present included: Jacob Edge, Downingtown Manufacturing Company, Downingtown, Pa.; J. J. Friel, Dill & Collins, Inc., Philadelphia; J. C. Harper, Jr., West Jersey Paper Manufacturing Company, Camden, N. J.; R. E. Finai, Paterson Parchment Paper Company, Modina, Pa.; H. E. Hosner, Scott Paper Company, Chester, Pa.; Lester Justice, Container Corporation of America, Manayunk, Pa.; A. C. Lade, B. F. Perkins & Son, Inc., Holyoke, Mass.; M. C. Maxwell, McDowell Paper Mills, Manayunk; J. Mazer, Mazer Paper Mills, Lansdowne, Pa.; W. T. Marble, Container Corporation of America, Manayunk; L. G. Murray, Scott Paper Company, Chester; F. J. McAndrews, McDowell Paper Mills, Manayunk; W. H. Mateer, West Jersey Paper Company, Camden; W. C. Massey, Paterson Parchment Paper Company, Modina; R. G. Macdonald, Secretary of TAPPI; G. A. Oechsle, Dill & Collins, Inc., Philadelphia; C. E. Peterson, Riegel Paper Corporation, Riegelsville, Pa.; I. H. Purcell, McDowell Paper Mills; W. P. Quinn, Container Corporation of America; John Roslund, Moore & White Company, Philadelphia; G. W. Roberts, General Electric Company, Philadelphia; C. W. Rivise, Philadelphia; Fred Streicher, Dill & Collins, Inc.; John Schoell, same company; Wyatt Schoonmaker, Titanium Pigment Company, New York; D. Manson Sutherland, Jr., Trenton, N. J.; H. C. Schwalbe, Dill & Collins, Inc.; W. M. Shoemaker, National Vulcanized Fibre Company, Yorklyn, Del.; H. H. Street, National Vulcanized Fibre Company; F. W. Varden, Barber Asphalt Company, Philadelphia; H. E. Wardwell, Dill & Collins, Inc.; M. B. Pineo, Scott Paper Company; H. F. Winchell, Scott Paper Company; L. F. Derr, Philadelphia; J. d'A. Clark, Scott Paper Company; H. P. Cannon, Container Corporation of America, Manayunk; G. N. Collins, vice-president of TAPPI; A. M. Cooper, Westinghouse Electric and Manufacturing Company, Philadelphia; C. M. Connor, Valley Forge Laboratories, Valley Forge, Pa.; De Haven Butterworth, H. W. Butterworth & Sons Company, Philadelphia; E. J. Albert, Thwing Instrument Company, Philadelphia; E. N. Wennberg, Continental Diamond Fibre Company, Bridgeport, Pa.; H. W. Piquet, MacAndrews & Forbes Company, Camden, N. J.; W. S. Bartholemoew, same company; R. Borie, A. M. Collins Manufacturing Company, North Wilbraham, Mass.; C. A. Shubert, Dill & Collins, Inc., Philadelphia, Pa.

Ask Protection for Paper Against Imports

GOUVERNEUR, N. Y., March 26, 1934.—A petition has been signed by many residents of this section urging federal legislative action to protect the paper industry against foreign importations. The document was sent out from Millinocket, Me., to George Caswell, head of the Oswegatchie Paper Company. At the present time the pulp mill of the company is being operated with a small force but the paper mill is still closed. The company employed about 125 hands prior to suspending operations in 1929.

New England TAPPI Discusses Waters

The New England section of the Technical Association of the Pulp and Paper Industry met at the Hotel Nonotuck, Holyoke, Mass., on Friday evening, March 23, 1934, Frederic C. Clark, chairman, presiding.

Industrial Water Problems

Sheppard T. Powell, consulting chemical engineer of Baltimore, Md., well known for his work on all sorts of water problems, presented a very interesting paper entitled "Industrial Water Problems and Their Correction."

Mr. Powell spoke in detail of the controlling factors involved in adequate water conditioning and directed attention to certain developments in the art influencing favorably the performance of such equipment.

In the paper mill, as in other manufacturing establishments, where large volumes of water are used, the requirements may be classified under three major uses, namely, process water, water for steam generating requirements; for fire protection and general sanitary purposes.

The installation and control of the water-conditioning apparatus requires careful investigation and intelligent operation as many water treating systems proposed by vendors whose knowledge of the complexity of the problem may be limited, are wholly inadequate and without merit.

The proper mixing of chemicals and water for coagulation is a very important factor as large savings in alum may be made by proper mixing treament as well as savings by reduced wash water for backwashing filters and lower filter maintenance. Mr. Powell referred to the advantages of pre-chlorination of the water in the filters and to the use of chemicals other than alum as coagulants.

He also stated that wherever it is necessary to secure process water entirely free from turbidity and color, such as in paper mills, the gravity type sand filters should be chosen in preference to the pressure units.

Mr. Powell covered very completely the subject of boiler feed water conditioning and referred to the importance of a safe and potable drinking water supply and an adequate supply of water for fire protection.

Mr. Powell supplemented his paper by a series of lantern slides which showed the different types of equipment used in industrial water installations and which illustrated many important points in his paper.

Reuse of White Water

The second speaker of the evening was Clarence M. Baker, engineer for the American Pulp & Paper Association, who covered the subject of "White Water Utilization." Mr. Baker explained the principles of white water utilization which consist essentially of the collection, recirculation and reuse of white water in place of fresh water throughout the mill. The fundamental principles are based upon recirculation without the use of save-alls except when necessary to recover stock from white water that must be wasted to the sewers. By means of slides Mr. Baker illustrated different points in his paper.

Various difficulties experienced in paper mills with the use of white water were mentioned by Mr. Baker:

1. *Slime.* Slime control is absolutely necessary for successful white water utilization. Clogging of showers, improper cleaning of felts and wires with white water are due primarily to the accumulation of slime rather than to stock in the white water. An effective slime control can be developed in any mill by the use of the ammonia-chlorine treatment.

2. *Foam.* Recirculated white water increases foam. Conditions of this sort may be improved by adjustments in structural details although chemical conditioning of the white water may be necessary.

3. *Acidity.* The reuse of white water lowers the pH which necessitates adjustments in sizing, particularly in the case of heavy body size. In some cases reduction in the amount of alum applied will overcome this difficulty. Where heavy sizing is required, chemical adjustment of the white water is necessary. In some cases this can be accomplished by the use of chemicals, such as sodium aluminate. This adjustment, however, is an individual problem for each mill.

Mr. Baker mentioned the increased temperature of the furnishing water with the use of a white water system, stating that in the moderate beating range the initial temperature of the water isn't of the greatest importance and that it has been found that just as good paper can be made if the beater is furnished with 80 degree water as with 50 degree water.

Savings in both fiber and water purification costs are greatly effected through the installation of white water systems, according to Mr. Baker.

The April meeting will be held in Fitchburg, Mass.

Those in Attendance

Those who attended the meeting were the following:

P. W. Ayers, Smith Paper Company, Lee, Mass.; Angelo M. Altieri, Fitchburg Paper Company, Fitchburg, Mass.; Andrew Barnett, American Writing Paper Co., Holyoke, Mass.; Charles J. Backus, Collins Manufacturing Company, N. Wilbraham, Mass.; Clarence M. Baker, A.P.P.A., Madison, Wis.; Herman T. Barker, Bird & Son, East Walpole, Mass.; F. K. Becker, Bird Machine Company, East Walpole, Mass.; W. Gordon Booth, Robert Gair Company, New London, Conn.; Thomas E. Boyne, Smith Paper Company, Lee, Mass.; William J. Burke, American Writing Paper Company, Holyoke, Mass.; Louis E. Burnett, Robert Gair Company, New London, Conn.; George Q. Butters, Strathmore Paper Company, Woronoco, Mass.; Arthur F. Bailey, DuPont Company, Providence, R. I.; Maurice Blew, Strathmore Paper Company, W. Springfield, Mass.; Philip S. Bolton, Clinton Sales Company, Boston, Mass.; Thomas C. Bowen, American Writing Paper Company, Holyoke, Mass.; A. F. Brunell, Papermakers Chemical Company, Willimansett, Mass.; L. M. Booth, Booth Chemical Company, Elizabeth, N. J.

Arthur Cardinal, Falulah Paper Company, Fitchburg, Mass.; Wilder A. Chapman, Skinner & Sherman, Inc., Boston, Mass.; F. C. Clark, Skinner & Sherman, Inc., Boston, Mass.; J. A. Constance, Millers Falls Paper Company, Millers Falls, Mass.; George Carroll, American Writing Paper Company, Holyoke, Mass.; Roy S. Charron, U. S. Envelope Company, Worcester, Mass.; Harold Chellis, Brown Company, Portland, Maine; Charles Davidson, Whiting Paper Company, Holyoke, Mass.; Richard F. Driscoll, Smith Paper Company, Lee, Mass.; C. W. Damon, Fitchburg Paper Company, Fitchburg, Mass.; C. P. Dyer, Merrimac Chemical Company, Boston, Mass.

Howard Ferguson, American Writing Paper Company, Holyoke, Mass.; Frank R. Filz, Geo. W. Wheelwright Paper Company, Leominster, Mass.; William L. Foote, B. F. Perkins Company, Holyoke, Mass.; H. B. Freeman, American Cyanamid Company, Boston, Mass.

A. N. Gair, Smith Paper Company, Lee, Mass.; James M. Geraghty, American Writing Paper Company, Holyoke,

Mass.; T. W. Griffin, American Writing Paper Company, East Lee, Mass.; John J. Healy, Jr., Merrimac Chemical Company, Boston, Mass.; Sam D. Hellberg, American Writing Paper Company, Holyoke, Mass.; Walter G. Hendrich, Collins Manufacturing Company, N. Wilbraham, Mass.; Arthur L. Hobday, Southworth Paper Company, W. Springfield, Mass.; M. V. Horgan, American Writing Paper Company, Holyoke, Mass.; Harold Holden, Papermakers Chemical Company, Stoneham, Mass.; John D. Henderson, *Paper Industry*, Chicago, Ill.

John F. Inderdohnen, Bristol Company, Springfield, Mass.; Chester Irving, Fitchburg Paper Company, Fitchburg, Mass.; H. L. Jenkins, Standard Brands Company, New York City; Andrew Jackson, American Writing Paper Company, Holyoke, Mass.; H. R. Johnson, American Writing Paper Company, Woronoco, Mass.; W. O. Johnson, Strathmore Paper Company, Woronoco, Mass.; Lena E. Kelley, American Writing Paper Company, Holyoke, Mass.; Harry M. Keating, Smith Paper Company, Lee, Mass.; Helen U. Kiely, American Writing Paper Company, Holyoke, Mass.; Raymond E. Kilty, American Writing Paper Company, Holyoke, Mass.; C. O. Kingsbury, Solvay Sales Corporation, Boson, Mass.; Ralph Kumler, Bennett, Inc., Wilmington, Del.

Frank H. Leonard, Marble-Nye Company, Providence, R. I.; H. S. Leonard, Merrimac Chemical Company, Boston, Mass.; Fred Lovenberg, Mathieson Alkali Company, Providence, R. I.; F. C. Ladd, Keith Paper Company, Turners Falls, Mass.; Harold Lavallee, Clinton Company, Holyoke, Mass.; J. T. Leecock, American Writing Paper Company, Holyoke, Mass.; Robert G. Loomis, Case Brothers, Manchester, Conn.; Edward Lavallee, Case Brothers, Willimansett, Mass.

J. L. Merrill, Valley Paper Company, Holyoke, Mass.; Gustav Mangsen, Fitchburg Paper Company, Fitchburg, Mass.; Charles A. Minor, Collins Manufacturing Company, N. Wilbraham, Mass.; Milton Murray, Westfield, Mass.

Herbert L. O'Neil, Falulah Paper Company, Fitchburg, Mass.; Herman A. Otto, American Tissue Mills, So. Hadley, Mass.

R. A. Packard, Smith Paper Company, Lee, Mass.; Robert Pattison, American Writing Paper Company, Holyoke, Mass.; R. J. Proctor, Fitchburg Paper Company, Fitchburg, Mass.; Charles Perry, Esleeck Paper Company, Turners Falls, Mass.; Sheppard Powell, Baltimore, Md.

E. O. Reed, Crane & Company, Dalton, Mass.; Ernesto Richardson, Smith Paper Company, Lee, Mass.; C. Lawrence Reece, Whiting Paper Company, Holyoke, Mass.; L. C. Reynolds, American Writing Paper Company, Holyoke, Mass.

Archibald Sharkey, Crane & Company, Dalton, Mass.; Albert E. Southard, American Writing Paper Company, Holyoke, Mass.; M. J. Sullivan, Falulah Paper Company, Fitchburg, Mass.; J. C. Sanburn, Strathmore Paper Company, W. Springfield, Mass.; Claude Smith, American Writing Paper Company, Holyoke, Mass.; T. L. Stirling, Papermakers Chemical Company, Willimansett, Mass.; W. D. Stroud, F. C. Huyck & Son, Albany, N. Y.; F. C. Schueler, Erving Paper Mills, Erving, Mass.

George A. Thompson, Jr., B. F. Perkins Company, Holyoke, Mass.; L. A. Thompson, Papermakers Chemical Company, Willimansett, Mass.; Robert M. True, Crocker-McElwain Company, Holyoke, Mass.; L. B. Tucker, Crane & Company, Dalton, Mass.; Leonard Taylor, American Writing Paper Company, Holyoke, Mass.

B. D. Warren, Bird Machine Company, South Walpole, Mass.; Fernand Willemain, American Writing Paper Company, Holyoke, Mass.; Grant S. Willey, Collins Manufacturing Company, N. Wilbraham, Mass.; Frank Williams, Crane & Company, Dalton, Mass.; George Williamson, Strathmore Paper Company, W. Springfield, Mass.; Bemis Wood, Strathmore Paper Company, Woronoco, Mass.; L. M. Yoerg, American Writing Paper Company, Holyoke, Mass.

New TAPPI Members

The Executive Committee of the Technical Association of the Pulp and Paper Industry has announced the following elections to membership:

Alexander V. Alm, chemical engineer, California Fruit Wrapping Mills, Pomona, California, is a 1925 graduate of the Massachusetts Institute of Technology and was formerly a research chemical engineer for the Dennison Manufacturing Company, Framingham, Massachusetts.

Charles W. Cassell, student, Institute of Paper Chemistry, Appleton, Wisconsin, is a 1929 graduate mechanical engineer from Purdue University. He was formerly in the engineering and power departments of the West Virginia Pulp and Paper Company, Tyrone, Pennsylvania; the mechanical department of the Buckeye Steel Castings Company, Columbus, Ohio; and was an editorial assistant on the publication, *Factory and Industrial Management*, New York.

Stanley F. M. Maclaren, chemical engineer and vice-president of the Snyder Maclaren Processes, Inc., New York, is a 1931 graduate of Tufts College. He was formerly a chemist for Rowntree & Company, York, England, and a research chemist for the Hooker Electrochemical Company, Niagara Falls, N. Y.

Nathaniel L. Malcove, chief chemist, Marinette and Menominee Paper Company, Marinette, Wisconsin, is a 1923 graduate in chemical engineering from Ohio Northern University.

Albert G. Natwick, assistant mill manager, Crown Willamette Paper Company, Camas, Washington, is a 1913 graduate of Chicago University and was formerly general superintendent of the Lincoln Pulp and Paper Company, Merritton, Ontario.

James Reid, technical manager, Robert Craig & Sons Company, Caldercruix Mills, Caldercruix, Scotland, attended the Royal Technical College at Glasgow, Scotland, at which he was a lecturer on pulp and paper technology.

Sigurd Samuelsen, director of the Pulp and Paper Research Institute of Norway, received his Ph.D. from Giessen in Germany in 1913. From 1916 to 1923 he was the chemical engineer for the Union Company, Oslo, Norway.

F. V. Albert Yraola, chemist, Hinde & Dauch Paper Company of Canada, Ltd., Toronto, Ontario, is a graduate of the Toronto Technical School and was formerly an assistant to T. L. Crossley, consulting chemist, and chemist for the Don Valley Paper Company, Toronto, Ontario.

To Be Vice-President of Chatfield Woods Co.

Frederick Forchheimer has been elected to the office of executive vice-president of The Chatfield & Woods Company of Cincinnati, Ohio. He has for some years been vice-president and general manager of the Chatfield & Woods Company of Pennsylvania. While retaining his residence in Pittsburgh, it is expected that he will devote part of his time to the work of coordinating the sales, purchases and policies of the companies comprising this organization.

Obituary

Bertrand Hopper

KALAMAZOO, Mich., March 26, 1934—Kalamazoo has lost one of its most useful citizens in the death of Bertrand Hopper, who after a lingering illness, died at St. Petersburg, Fla., on March 20. His character rested upon a foundation laid deep in human love. For more than twenty-five years the civic life of the community has been aided by his activity. For much of that time, Mr. Hopper was a leader.

Many of the fine enterprises which have been accomplished here, can be attributed directly to his energy and leadership,—he was the type of citizen who makes a community a good place in which to live. He was always ready and willing to give of his time, assistance and money for the benefit of community welfare. No friend in sickness or in need ever found Mr. Hopper lacking in aid,—he was charitable to a fault.

Mr. Hopper will be missed. His loss is a distinct and irreparable one, especially to the stationery trade, with which he has been identified as a leader for more than two score years. His friends make up a wide circle, embracing every state in the Union and Canada. His untimely death is deeply and sincerely mourned throughout the land.

Way back in the early '80's was the beginning of his successful business career. At the age of fifteen he left his father's farm at Ridgewood, N. J., to seek greater opportunities. His first job was that of an office boy with the Whiting Paper Company, of New York City, beginning with the nominal salary of $3.00 per week.

Four years later, at the age of nineteen, he represented on the road, the old house of J. Q. Prebble & Co., one of the leading stationery manufacturers of their time. This opened the "Door of Opportunity" to his successful business career. Two years later he became Sales Manager of the New York Pad and Paper Company. At the age of twenty-three he entered into partnership with Roger Morgan under the name of Hopper-Morgan Company. The success of this firm was phenomenal; in a short time they became a leader in their line.

Later, the firm dissolved and Mr. Hopper took over the factory located at Benton Harbor, Mich., incorporating as the Hopper Stationery Company. In 1907 Mr. Hopper sold his factory at Benton Harbor and purchased the controlling interest in the Kalamazoo Stationery Company. In 1910 he organized the Hopper Paper Company at Johnsonburg, Pa. In 1916 the Granite City Tablet Company, of St. Cloud, Minn., came under his control. The same year he bought the plant of Marcus Ward, of Brooklyn, N. Y., speeding up this factory to its fullest capacity. In 1920, he sold this plant at a substantial profit to the United Drug Company. In 1918 Mr. Hopper became associated with the National Paper Goods Company, Ltd., of Hamilton, Ont.

In 1922 he organized the Hopper Paper Company, Ltd., of Richmond, Va., which is one of the leading converters of paper in the South today. About this time he took over a paper mill at Taylorville, Ill., and organized the Hopper Paper Company, which has proven to be one of his most successful enterprises. In the fall of 1927 the Western Tablet and Stationery Corporation was formed. The new company was a merger of outstanding tablet manufacturers in the United States, including the Kalamazoo Stationery Company. Mr. Hopper was one of the leading spirits to bring about this merger, and until he sold his interest, three or four years later, he was the principal stockholder.

Surviving him are his widow, Mrs. Alta Hopper, three sons, Mortimer Hopper, of St. Joseph, Mo.; Robert Hopper of Richmond, Va.; Bertrand C. Hopper of Taylorville, Ill.; and two daughters, Mrs. Gordon Harrower of New York City; and Mrs. Douglas Haldane, of Glen Rock, N. J.

His death closed the life of a great citizen, a great friend, a great leader in industry.

W. A. Gocke

W. A. Gocke, of the Shartle Brothers Machine Company Division of the Black-Clawson Company, manufacturers of paper mill machinery, Middletown, Ohio, died Wednesday morning, March 21, at Mayo Brothers Hospital in Rochester, Minn. Mr. Gocke was born in Fort Wayne, Ind., June 15, 1902.

After graduating from the schools of Fort Wayne, he entered Purdue University, graduating there in 1924. Shortly after, he entered the employ of what was then the Griley Unkle Company, a concern identified with the manufacture of continuous beating equipment. This concern was taken over by the Shartle Brothers Division of the Black-Clawson Company in 1927, and Mr. Gocke became associated with Black-Clawson Company at that time.

From that time on he remained with the Shartle Brothers Division in the capacity of sales engineer, spending the greater part of his time in Wisconsin and Minnesota.

In September of last year he was advised by his local physician to go to Mayo's at Rochester, Minn., for examination and treatment, and he was operated on at this hospital shortly after, came through the operation in splendid shape, and was almost ready to return to work when further trouble developed which lead to his death.

Mr. Gocke was, without question, one of the ablest and best-liked sales engineers in the paper industry. Known as Bill Gocke throughout the entire industry and held in high regard for his direct honesty and ability in the field that he labored, his loss is keenly felt by all those with whom he came in contact.

Funeral services were held at the home of Mr. Gocke's father, in Fort Wayne, Ind., Saturday, March 24.

A. P. Bolner

APPLETON, Wis., March 26, 1934—A. P. Bolner, 67 years old, assistant superintendent of the Nicolet Paper Company, DePere, Wis., and one of the first men to make glassine paper in this country, died March 18 at a hospital at Green Bay, Wis., of complications following an operation.

Mr. Bolner had been a paper maker for about ten years when glassine was introduced in the United States under a process perfected in Germany. He was a machine tender in a mill at Hartford City, Ind., about 35 years ago when the first sheet of glassine was run off his machine. From that time he was identified with glassine manufacture in Massachusetts, New Jersey, Washington and other states.

He came to DePere five years ago, shortly after the Nicolet Paper Company was organized and converted the American Writing Paper Company's mill there to a glassine plant. Prior to that time he had spent two years at the Rhinelander Paper Company, Rhinelander, Wis. He is survived by his widow and two sons, Glenn and Charles, of DePere. The body was conveyed to Hartford City, Ind., for burial.

Mrs. Helen E. Ham

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., March 26, 1934—Sincere sympathy is extended to Arthur E. Ham and his sons, Herbert C.,

James L., and A. Lawrence Ham, in the passing of Helen E. Ham, wife and mother, on Friday, March 16, after being in poor health for several years.

Mrs. Ham and Arthur E. Ham entered the employ of one of the large Boston paper houses the same week in May, 1892, and after an acquaintance of two years were married.

Mrs. Ham always maintained an active interest in the paper business and, up to four years ago, took part for years in the social activtities provided for the ladies at the annual meetings of the National Paper Trade Association. At these meetings she made many acquaintances which she always looked forward to renewing each year.

Edward Henry Knebber

INDIANAPOLIS, Ind., March 26, 1934—According to word received here, Edward Henry Knebber, 32 years old, vice-president of W. F. Lilly & Co., of Elkhart, Ind., paper jobbers, died last Tuesday morning at the home of his parents, Mr. and Mrs. Frank H. Knebber, Galena, Ill. He went to his parents' home last September when it was found by medical examination that he was suffering with a brain tumor. He had undergone an operation at the University of Michigan hospital and for a time his condition seemed to improve.

Mr. Knebber was born in Galena and when nineteen years old went to the State of Washington to launch his career in the wholesale paper business. He also was employed in Chicago and South Bend before going to Elkhart to be associated with the Lilly company. He was married in 1926 and is survived by the widow and two children. Funeral services were held at St. Mary's Catholic Church in Galena, with burial in the parish cemetery.

Fred A. New

[FROM OUR REGULAR CORRESPONDENT]

DALTON, Mass., March 19, 1934—Fred A. New, for many years superintendent of the paper mills of Crane & Co., Inc., where all of the government's paper was manufactured until recently, died March 19 at his residence after a long illness. Mr. New was 63 years of age.

He was born at Ballston Spa, N. Y. He came to this town with his parents when a child, entering the Crane mills at the age of 14. In 1910 he was made superintendent of the government mill, remaining in charge until 1920, when he was transferred to the Pioneer mill of the same company. His wife, Jessie New; a son, George F. New, of Dalton; and two sisters, are living.

PHILADELPHIA DEMAND EXPANDS

(*Continued from page* 17)

Fales of Worcester, Mass., to the Franklin Institute by express, and so compact and complete was it that on arrival at the Institute it was only necessary to hook up to a power line, connect the fresh water and sewer lines, and the process of making paper was started immediately.

This unique papermaking machine was made possible through the untiring efforts of L. M. Start, secretary of Rice, Barton & Fales, in collaboration with R. L. Davis, Graphic Arts Director at the Franklin Institute.

Charles McDowell Returns from Cruise

Charles McDowell, president of McDowell Paper Mills, Manayunk, has just returned from an extensive trip along the coast of Florida on the yacht *Tharmarie*—having missed the cold spell which we up here were experiencing. Mr. McDowell stated, on his return, that general business is on the upward trend, and also that Florida has had the largest and best season in years.

Waste Material Dealers Dine

The twenty-first annual banquet of the National Association of Waste Material Dealers, held Wednesday evening at the Hotel Astor, New York, was a very enjoyable affair and a distinct success in every respect. The banquet was attended by more than four hundred members and guests. The toastmaster was George Birkenstein of S. Birkenstein and Sons, Chicago, who has just been reelected president of the association.

Mr. Birkenstein introduced the following speakers: Matthew Mataer, secretary to the Sanitation Department of the City of New York, who delivered the address of welcome to the city on behalf of the City Administration; John B. Kennedy, well-known radio news commentator; Godfrey Bloch, NRA deputy administrator; Dr. Kenneth Dameron, also a deputy administrator, and Senator Ford, humorist. "Cardini" entertained with some clever card and other tricks. The toastmaster also introduced a number of officers of the association, including Charles M. Haskins, general manager and secretary of the association, and commended them for their good work.

The banquet committee consisted of the following, who are greatly to be commended for their fine work in arranging an excellent dinner: Chairman, H. H. Cummings; Carlton B. Overton, Joseph Schapiro, E. J. Keller, Paul J. White, Harry S. Goldstein, Sol Ash, Robert Blank and David Feinberg.

Howard Brooks Resigns As Superintendent

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., March 27, 1934—Howard Brooks of Cherry Hill, for 30 years connected with the Crocker-McElwain and Chemical Paper Manufacturing firms, has resigned and with his wife will leave this week to live with their son, Leonard, in California. Friday he was tendered an informal luncheon at the company's offices. In behalf of the officials of the two companies, he was presented with a motion picture machine and a projector, Elmer C. Tucker, vice-president, making the presentation. For the employes, Ralph Morrill, manager of the Chemical Company, and Philip W. Gridley, manager of the Crocker-McElwain concern, presented him with handbags. Clifton A. Crocker, president of the two concerns, made a short address telling of Mr. Brooks' service and value to the companies.

Mr. Brooks was born in West Springfield and had been with the chemical mill five years as unit superintendent, and with the Crocker-McElwain concern for 25 years previous.

Holyoke Power Co. Sues American Writing

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., March 27, 1934—The Holyoke Water Power Company filed suit in the United States District Court at Boston this week, against the American Writing Paper Company of this city for $32,034 for water rentals alleged to be due under contracts of 1881 and 1890. The defendant, it is alleged, owes this sum owing to the difference of gold values for several mill power rentals for six months ending Dec. 31, 1933, since the dates of the water leases.

Appointed Agent for Brown's Linen Ledger

The Whitaker Paper Company of Atlanta has been appointed an agent for Brown's Linen Ledger, the well-known permanent record paper made by the L. L. Brown Paper Company of Adams, Mass. This company has been a distributor of Greylock Linen Ledger, another L. L. Brown product, for some time.

Couch Rolls for Cylinder Machines

By E. Peterson[1]

The removal of the sheet from the cylinder mold on conventional cylinder machines is accomplished by a couch roll, the function of which is to press a felt against the fiber on the cylinder mold face, causing the formed sheet to adhere to the felt or to another sheet already attached to the felt. Fig. 1. To insure a clean pick-up of the sheet from the mold, to prevent crushing or other damage to the weak web, and to provide uniform pressure across the face of the cylinder mold it is necessary that the couch roll surface possess a certain amount of cushion. The face cushion of the couch roll must not only spread out to distribute a uniform pressure to a large area, but must also absorb the irregularities of the cylinder mold face. Therefore, a soft and resilient cushion on the couch roll face is highly desirable. Sponges, old felts, and rubber have been utilized to give couch rolls this necessary degree of cushion.

The sponge couch, now practically obsolete, usually had for a base, or core, a number of cast iron spiders mounted on a shaft. To these spiders thick wood planking was bolted to form the roll shell and the whole assembly was then mounted in a lathe so the outside wood could be turned concentric with the center shaft.

To the wood jacketed core were nailed natural sponges, the nail being inserted through the sponge or part of the sponge which had been twisted, and the nail driven well below what was to be the outside surface of the roll. As this process continued the sponges were packed closely together, thus getting a compact mass of sponge to form a surface for the roll. It was in this manner that most sponge couch rolls were built up. The next steps were to make the sponge couch round and to give it a fairly true surface. Grinding was necessary and this was an extremely dusty job unless it was done in winter when the temperature was low enough to freeze the sponges after they had been soaked in water. Frozen sponges presented a hard surface which could be machined readily.

Another Method of Trimming

Another method of trimming or grinding was done by taking a slitter knife with saw-like teeth in it and then mounting it on a motor shaft, setting it at an angle so that it acted as a high-speed knife or saw. This actually sheared off the protruding tips of sponge as it traveled across the face of the roll. Sponge couch rolls were very expensive to build and good sponges were high in price and hard to obtain so that initial cost was almost equal to the modern rubber-covered roll. The failure of the sponge couch occurred because of disintegration of the sponge and loosening of nails.

[1] Mgr. Paper Industry Sales, The B. F. Goodrich Rubber Co.

FIG. 1

Multi-cylinder running—time exposure, 40 seconds.

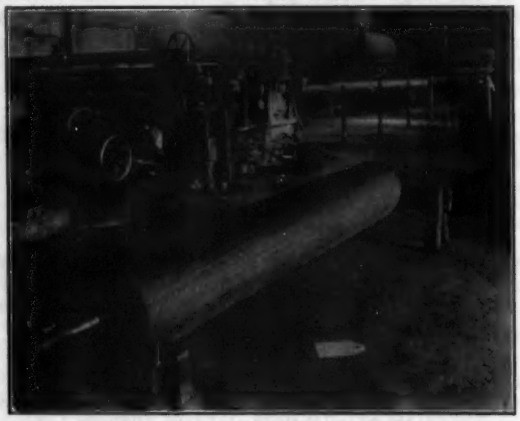

FIG. 2

Felt covered couch roll completed—strips partially spiralled.

The couch roll surface made up of old felts is a widely used type and is a type which lends itself to many variations in construction. Although there has been very little variation in the construction of the roll body itself, this being practically the same as that employed for the sponge couch, several different methods of applying the felt to the body have been used. One method of attaching the felt to the wood facing is to prepare small rolls made of narrow strips of old felt by rolling them up like a bandage. They are then stood on end and nailed to the wood, as was the custom with the sponge coverings, packing one small roll of felt against another to form a solid face. The roll is then ground to true the surface, although, in some instances they have been used without grinding.

First Step in Another Method

The first step in another method of attaching felt to the wood covered shell is to cut strips of felt equal to the length of the roll. It is possible for these strips, folded lengthwise, to envelop a long wire which may be nailed to the wood with staples. As a result of this method of attachment, the two raw edges of the felt protrude out from the core to form the actual surface of the roll. By continuing to apply strips of felt in this manner, the entire wooden surface eventually becomes covered. One deviation from this technique is to partially spiral the strips on the roll instead of in a straight line parallel to the axis of the core. Fig. 2.

In some instances no attempt was made to build an elaborate roll covering, the felt being merely wrapped about the wood-covered shell in a number of thicknesses but these are so hard and troublesome that they are used generally only in emergencies. The felt covered couch roll after being in service but a short time starts to become lopsided and out of round, causing the roll to pound on the cylinder

mold. This pounding brings about flat spots on the cylinder mold which necessitates additional weighting being applied to get a clean pick-up. Furthermore, the felt cover has little resiliency so that in spite of the fact that felt covered rolls absorb a great deal of water, thereby increasing their weight, it is necessary to add even more weight to secure the proper service from this type of roll.

Constant Attention Necessary

Constant attention is necessary to keep the roll round, and as this attention is expensive it is most generally avoided by letting the roll continue in operation even though it may have become considerably out of round and accumulated plenty of flat places. The pressure on the roll against the cylinder mold and water and service conditions soon cause the felt covering to become hard and need replacement. The life of the covering is therefore comparatively short, even when the operator is careful.

As the felt cover is always wet and drying out only partially on the week-end shut-down, mildew and rot are many times the cause of frequent replacements of the felt, and also cause mildew on the paper machine felt if allowed to be in contact with the couch roll during the shut-down period. It is no wonder then that the operator sought something that would take the place of the felt-covered roll and it was then that the rubber-covered roll began to put in an appearance.

Primary Costs Paramount in Many Mills

Primary costs being paramount in many mills, attempts were made to utilize as much of the old equipment as possible so the old shafts on which spiders were mounted, had the felt and wood shell removed, the spiders machined round and a piece of sheet iron riveted about the spiders to take the place of the wood so as to have a core which could be rubber-covered. Rubber was then applied about the shell, in some cases the sheet iron had been perforated to provide additional anchorage for the rubber.

However, when we consider that the old felt cover had been approximately two to three inches thick, the wood planking about two inches thick, the reconstruction of the old core for a rubber covering had reduced the diameter of the roll anywhere from eight to ten inches. Even though a thick rubber cover was applied the rubber-covered roll was still six to eight inches smaller in finished diameter than when it was originally covered with felt!

Due to this reduced diameter and that in the early days of rubber-covered couch rolls, three-quarter inches of cover seemed to be general and that this cover with its hard rubber base only afforded about a half inch of cushion, it was no wonder in a number of cases that the rubber-covered roll was condemned and the operator continued making felt-covered couch rolls. Since then, however, better and bigger cores have been made—the rubber cushion thickness increased—and complete success achieved as a result of the improvements.

Do rubber-covered rolls pay for themselves? Before this question can be answered, it is necessary to compute the cost of felt-covered rolls. The first thought in reply to this question is that old felts have little or no value and that one of the workmen can make up the felt-covered rolls in his spare time.

Some Interesting Figures

If every operator who builds felt-covered couch rolls would keep a record of the original cost and maintenance of the felt-covered type of couch rolls he would arrive at some very interesting figures. The total amount of felt consumed to make the roll should be weighed, counting the weight actually on the roll and waste, then determining from the prevailing market price on old felts what he would have gotten for the felt in case he had sold it instead of using it. The actual labor required to build the roll is very often underestimated. An actual cost should be kept. Wire, nails and staples do not form a large item but they must be paid for nevertheless and added to the cost of the roll.

The wood shell is of course not replaced each time the roll is recovered with felt, but if the cost of the wood, labor, and bolts were kept and then divided by the number of coverings that can be put on one set of wood jackets and added to the individual costs of felt recoverings, it would be found to be a considerable item.

An actual case on an 18x92 inch roll is given by a prominent paper mill:

Actual felt used	300 lbs. @ ———
Felt wasted	50 lbs. @ ———
Labor preparing and applying felt	20 hrs. @ ———
Copper wire	12 lbs. @ ———
Staples and nails	10 lbs. @ ———
Truing up roll	$ 8.40
Wood replacement $33.45	11.15
(Estimated wood can be used for 3 felt covers)	———
Total Cost	$———

This mill estimated total costs of $114.35 per cover, and found the average life of felt covered rolls in continual service was 6 to 7 months and the wood shell would stand two and sometimes three covers.

To estimate your own costs fill in the blanks. The life of a felt covering as already stated is most generally short so the replacements over a period of time should be kept to determine the total cost of maintenance per year, not forgetting to add the cost of removal from the machine and re-installing the roll each time.

Surveys have been made that show enough money is spent to maintain felt covered couch rolls in a year and a half to three years in many mills to equal the purchase price of complete rubber-covered couch rolls. Possibly the operator who is still maintaining felt covered couch rolls may have had discouraging experiences in the past with rubber covered rolls and hesitates therefore to give the rubber covered roll the consideration justly due.

Failures Fairly Well Classified

Upon checking into the matter of rubber covered couch roll failures it has been found that these failures can be fairly well classified. Rolls have been too small in diameter, either too heavy or too light for the purpose or particular machine, too short in face length, and the rubber cushion too hard or too thin.

How, then, will the operator know what is best suited for his particular machine, and to prove economical in production? To the operator of multi-cylinder machines comes the thought that he must spend money installing rubber covered couch rolls and therefore wants to make the expenditure pay him the most return and be assured that these rolls will be successful.

First Consideration

Before choosing the size of roll to be used in the multi-cylinder machine, consideration must be given to the diameter and face of the cylinder mold so that the new couch rolls and the cylinder molds will be in proper ratio as to size. As related it has been found that in some instances in the past rolls were made too small in diameter and it is therefore the belief of the writer that on machines having

32 inch to 36 inch (inclusive) diameter molds, the most economical and best operating roll is one having a core diameter of not less than 16 inch and a rubber covering of not less than 1 inch cushion, preferably 1¼ inch cushion to start, making the finished diameter of the roll not less than 18 inch.

Having couch rolls of sufficiently large diameter, especially on the smaller diameter cylinder molds, it is possible to get a good width of nip and a clean pick-up from the face of the mold, especially if the cylinder mold has any flat places or is slightly out of round. This may be the case especially if the molds are old and have been running with flat, lopsided and out-of-balance felt covered couch rolls.

If the operator passes the bottom felt around the last couch roll and eliminates the drum roll, it is better to have this particular roll of generous size and possibly larger than the rolls on the other cylinders because it must serve a dual purpose and especially as it must be heavily weighted to counteract the lifting action of the bottom felt as it rises at an angle to join with the top felt. In giving the diameters of the couch rolls to be used, it is found that the sizes as given are minimums and it is only natural that larger rolls are to be recommended where the initial outlay will permit, because greater economies and better operating results are afforded in larger rolls. It is obvious that on larger rolls a greater width of nip can be obtained with a given pressure. (It has been proved in a number of cases that rolls smaller than those recommended have been used successfully, which is the exception rather than the rule.)

The length of the couch roll should be 4 inches longer than the face of the cylinder mold in order to give a 2 inch overhang at each end. This overhang prevents the felt from turning up at the edges and holding in the water, also prevents abnormal wear on the ends of the roll as occurs when the roll is the same length as the cylinder face and the felt can curl upwards on the edges. The very soft rubber cushion on a couch roll displaces circumferentially but at the ends the resistance to this movement is less and the rubber tends to displace towards the end of the roll. By adding to the length of the roll and getting beyond the end of the mold greater resistance is offered and this endwise movement of the rubber cushion is minimized.

Couch Rolls for Multi-Cylinder Machines

Couch rolls for multi-cylinder machines of average width should be constructed so as to give an operating weight of 10 to 13 pounds to the lineal inch of face of cylinder mold (without weighting). Weighting, not to exceed 25 pounds (including weight of roll) to the lineal inch, can be applied without permanent injury to the soft rubber cushion. In the normal lengths of couch roll cores constructed of steel pipe, ⅜ inch wall pipe will give the roll sufficient strength to stand the additional weighting, without causing the core to bend from the weighting applied at the journals, so even though the rolls be constructed to weigh less than what may be thought to be initially necessary, it is better to have rolls possibly lighter but of sufficient strength to take up the total maximum load and add weights, if necessary.

FIG. 3

Typical plain bearing couch roll core.

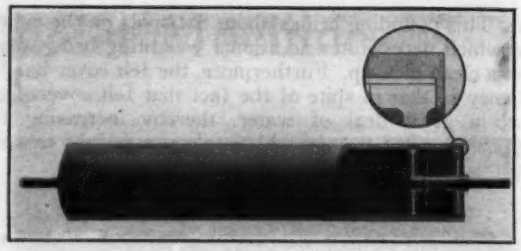

FIG. 4

Cut-away showing double gudgeon core with cover and end anchor.

When it is a known fact that rubber covered couch rolls last over a period of years, it is essential that the prospective purchaser or operator of the rubber covered couch rolls give careful consideration to the core construction as well as the actual rubber covering. Steel pipe has been found to be the most economical, strongest and best for the body of the roll. (Standard sizes of large steel pipe are 14, 15, 16, 18, 20, 22 inch outside diameter.)

For the plain bearing roll or the rolling having external roller bearings, it is necessary to have stub shafts, and in order that these stub shafts may have long life, and stay true, if the roll is weighted, they should have sufficient anchorage in the gudgeons. Fig. 3. It has been proved by experience and engineering data that a shaft running through the entire length of the core, supported by spiders, adds but little if any strength to the roll, nor does it add any other advantage. In fact, it has a disadvantage in that the spiders inside the roll cannot be very well anchored in the steel pipe and there is a possible chance of vibration of the shaft taking place which will affect the rubber covering badly at times, and also carry this vibration into the cylinder mold.

Modern Construction Demands

The modern construction calls for a single or double gudgeon in each end of the roll into which the shaft has been pressed and then shrunk and thoroughly fastened inside the steel shell and after assembly, the shafts turned to be concentric with the natural contour of the pipe. Fig. 4. Couch rolls should be at least statically balanced, if possible, dynamically balanced to provide for future higher speeds. Balanced rolls of any kind on a paper machine insure smooth and economical operation.

A couch roll core should be so constructed that it will not permit the entry of water, causing corrosion to occur in the steel shell to weaken it and destroy its value. If properly sealed at the ends so no water or moisture may enter the roll, the core will outlast a number of rubber coverings. Fig. 5. Further provision should be made to bring the cover slightly over the ends of the roll in what is termed an "end anchor", as illustrated in Figs. 4 and 5. These end anchors cover up the steel completely so that no corrosion occurs, for as corrosion occurs on steel, it expands and may bell out the rubber cover at the end of the roll and cause the rubber to loosen on the ends prematurely.

By bringing the rubber cover slightly over the ends and bonding it to the cast iron, this corrosion will not be troublesome, for as every operator knows, there is very little corrosion on cast iron. This is successfully accomplished where the rubber cover can be directly bonded to the metal by some means such as the Vulcalock process. Fig. 6 shows a roll which was made a number of years ago where the steel was exposed and rust occurred, working its way under the cover and breaking away the old style hard rubber base because of expansion.

Many cylinder machines, operating with felt covered couch rolls, are running without the use of anti-friction bearings on the rolls and the operator may want to consider anti-friction bearings when putting on new equipment. This presents another problem as the journals must be prepared for the anti-friction bearings, changes made in the hanger-arms, new pillow blocks installed and this done on all the rolls at one time in order to make them interchangeable. Most generally the operator when starting to install rubber covered rolls will buy one at a time, gradually replacing his old felt covered rolls. In order to make them all interchangeable, he has to install anti-friction bearings, even on the old felt covered rolls or not have an interchangeability.

An Internal Bearing Construction Roll

An internal bearing construction couch roll has been brought out to overcome this difficulty, give the operator an anti-friction bearing and yet enable him to maintain interchangeability and provide his machine with anti-friction bearings at a low cost.

The installation of this roll necessitates no change at all in the old hanger-arm or bearing; merely wipe the old bearing free from grease, remove the shims and tighten the bearing down on the shaft, for in this roll the shaft stands still and the roll revolves about it. In this internal bearing type of roll core, the bearings must necessarily be self-aligning to take care of any deflection in the shaft when weighting is added to the end of the roll and they must be of substantial construction. In order to make the roll of sound construction, bearings are put into a cartridge and the cartridge inserted in the gudgeon or head. Water sealing rings are provided in the cartridge to prevent the entry of water into the bearing and provide for little, if any, loss of grease from the bearing. With the proper construction, these rolls will run six months to a year between greasings. Fig. 7.

FIG. 5
End anchors showing complete covering of steel and sealing of end.

FIG. 6

Rubber Covering for General Purposes

In rubber covering couch rolls for general purposes, in multi-cylinder machines, tissue machines, and straw machines, it has been found that as soft a cushion as it is possible to make, and yet be tough, is the most desirable, and this point is approximately 250 density taken with a Pusey & Jones plastometer, using ⅛ inch ball.

When it is known that about ⅜ inch is the minimum cushion to which the rubber cover can be worn (Fig. 6), then the operator can best judge what thickness of cover would be the most economical to purchase. If the rubber covering were 1 inch thick initially, and the cushion directly attached to the metal core, as in the case of Vulcalock rolls, a ⅝ inch thickness of actual wearing rubber would be provided. On old style hard rubber base rolls, having ⅛ to ¼ inch of hard rubber as a base, the usable cushion is only ⅜ to ½ inch if the original thickness is only 1 inch. The 1¼ inch cover on the other hand with all cushion rubber, directly attached to the metal, will provide ⅞ inch usable rubber, or ⅝ inch to ¾ inch usable rubber if it is built using the hard rubber base construction.

Thicker Covers and Cushions

There has been a gradual realization of the added economy of thicker covers and cushion because the figures are obvious. The records disclose that the average thickness of cover ten years ago was ¾-inch which included a hard rubber base. Now there is rarely a couch roll purchased

FIG. 7
Complete internal bearing roll with end anchors on rubber cover.

with less than 1 inch of cushion and a large percentage with 1¼-inch cushion. Not less than 1-inch actual cushion of soft rubber is recommended as an initial purchase and as the figures will show, 1¼-inch actual cushion of soft rubber will prove more economical to the operator.

On the average it has been found that couch rolls should be ground once a year or slightly less, depending upon the speed of the machine, weight of roll, weights applied and whether or not a high or low deckle is used on the cylinder mold. High deckles tend to displace the rubber and form a groove if allowed to run too long without regrinding. The elimination of the fabric deckle and use of the water deckle will add considerable to the time between grindings. The life of the rubber covering on couch rolls has been found to be from 5 to 15 years, the length of life being dependent upon initial rubber thickness, diameter of roll, speed of machine, bearings used, operating conditions, and care in regrinding.

A couch roll on a single cylinder machine, running on papers other than tissues, is generally the same as the roll on multi-cylinder machines. But where the felt passes around the couch roll and does not pass around a suction couch roll, it is very essential that the roll face be 4 inches or more longer than the cylinder mold face, in fact should be longer than the initial width of the felt, in order to keep the felt from folding over the edge of the roll, causing premature wear and other conditions as described with the multi-cylinder machine. For the single cylinder machine running on tissue, light weight couch rolls are much to be desired. It is therefore necessary to build them either of a light steel shell or of aluminum. For tissue machines, a couch roll should generally weigh from 6 to 8 lbs. per lin. inch as compared with 10 to 13 lbs. per lin. inch for couch rolls on other types of cylinder machines.

Aluminum Seems to Meet Requirements

The light weight steel shell is hard to make substantial within the weight limit, but it has been found that aluminum seems to meet the weight requirements and give the necessary strength. The aluminum roll also may be secured in the internal bearing type with an aluminum shell with cast aluminum gudgeons and with a hollow shaft running throughout its length, thus reducing the weight.

Care should be taken when operating a couch roll where kerosene is used to keep down the foam, that the oil is well distributed so that it does not attack any one point on the roll, thus affecting the rubber uniformly. Strange as it may seem, there have been more rubber covered couch rolls put into operation to replace other types during the years of depression than the same number of years of plenty (which immediately preceded the depression), because during the lean years maintenance costs were very carefully checked and wasteful practices eliminated.

Paper Mill Employment

Four hundred and twenty-four paper and pulp mills reported their January employment at 100,710, a decrease of .8 per cent compared with December but an increase of 26.5 per cent over January of last year according to the Bureau of Labor Statistics. The average weekly January payrolls in these mills were $1,788,621, a decrease of .8 per cent under December but an increase of 35.3 per cent over January last year.

The Bureau also received reports from 319 paper box factories which gave their January employment at 23,852, a decrease of 5.9 per cent compared with December but an increase of 16.9 per cent over January last year. The average weekly payrolls in these factories were $406,834, a decrease of 7.8 per cent under December but an increase of 24.5 per cent over January last year.

Code Authority for Waste Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., March 28, 1934—National Recovery Administrator Hugh S. Johnson has prescribed the method of selection of the Code Authority for the Waste Paper Trade, a division of the Scrap Iron, Non-ferrous Scrap Metals and Waste Materials Trade. The Code directs him to do this, and the method follows:

"The National Association of Waste Material Dealers, Inc., shall select a total of five members of the Code Authority; the American Paper Mill Supplies Institute shall select a total of five members; local associations representing mixed dealers shall select four members, who shall be bona fide mixed dealers, two of whom shall be endorsed by the National Association of Waste Material Dealers, Inc., and two of whom shall be endorsed by the American Paper Mill Supplies Institute. The fifteenth member shall be selected by the Administrator, on the recommendation of the Administration member thereon, at such time and from such group as said Administration member shall recommend. The Administration member shall also recommend to the Administrator any changes that may be proper. The recommendations of the Administration member shall be effective with respect to such changes recommended for the Code Authority on approval by the Administrator."

General Johnson has also prescribed the following method of selecting a code authority for the cotton rag trade:

The National Association of Waste Material Dealers, Inc., shall select seven members and the American Paper Mill Supplies Institute three members, in whose business mills using cotton rags shall have no financial investment; and local associations representing mixed dealers shall select five members who shall be bona fide mixed dealers, two of whom shall be endorsed by the National Association of Waste Material Dealers, Inc., and three of whom shall be endorsed by the American Paper Mill Supplies Institute.

Awards for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., March 28, 1934—The Government Printing Office has announced the following paper awards:

Reese & Reese will furnish 35,400 pounds of 75 per cent rag lithograph finish map paper, various sizes, at 17.26 cents per pound. The Aetna Paper Company will furnish 11,150 pounds of 50 per cent rag white ledger paper, 18½x40¼ at 15.03 cents per pound and the same firm will also furnish 16,300 pounds of 28x34 white sulphite ledger paper at 6.54 cents per pound. The Butler Paper Company will furnish 82,800 pounds of 25 per cent rag white bond paper, various sizes at 11.64 cents per pound and the same firm will also furnish 20,200 pounds of 50 percent rag same at 14.06 cents per pound. Bids for all of these items were received on March 14.

Walker-Goulard-Plehn Company will furnish 2,000 pounds of 50 per cent rag cream white laid cover paper 20x25 at 12.56 cents per pound. The Whitaker Paper Company will furnish 40,000 pounds of M.F. book paper in 18 inch rolls at 4.58 cents per pound and 3,700 pounds of 24¼x36¼ M.F. book paper at 4.65 cents per pound. Bids for these items were received on March 12.

Midwest Rag Dealers Association Meets

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., March 26, 1934—Twenty-five members of the Midwest Rag Dealers Association met here recently to discuss the code of fair practices. Seven states were represented.

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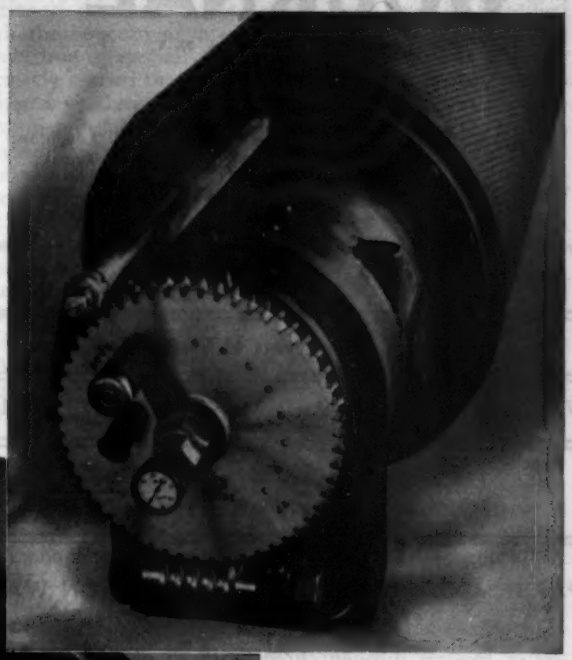

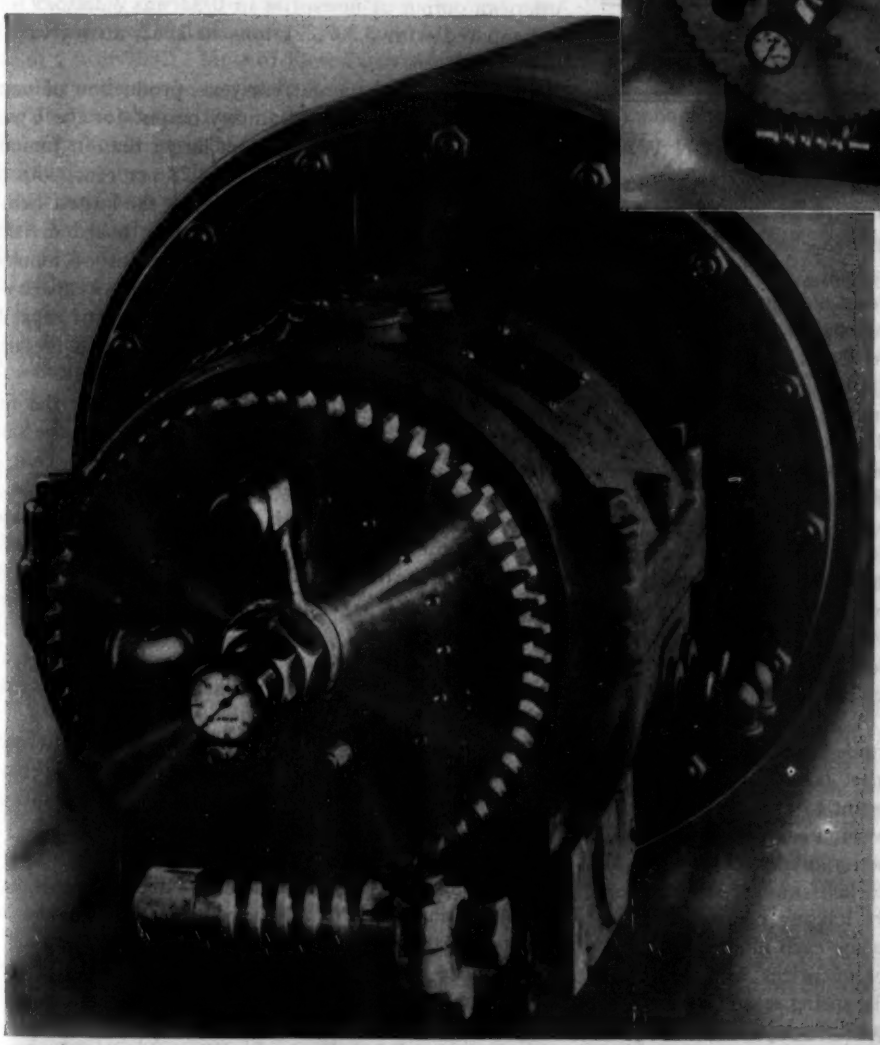

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PAPER TRADE JOURNAL

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PAPER AND PULP INDUSTRY WELL ON WAY TO PROFITABLE YEAR

After passing through three years of declining values and volume, a trend which was not checked until the second quarter of 1933, paper companies generally now have achieved a position which assures a more rapid rate of expansion. The new year has started with production as well as prices far above the low levels prevailing early in 1933, and all branches are to be benefited further by the codes which promise the elimination of the price-cutting mania, which all but destroyed the industry a few years ago. Average volume during the first quarter ranged from 35 to 40 per cent over that for the comparative 1933 period, demand covering nearly the entire range of papers, with bond and rag leading. The quick recovery of the wrapping paper division has been little short of phenomenal, and is indicative of the spreading improvement in general business activity.

The steadily increasing volume during the last six months of 1933, together with the higher prices, enabled a number of firms to show profits at the close of the year, while in other instances losses were curtailed for the first time in four years. Although the market is not quite so steady as it was last fall, indications point to a more accelerated movement during the next few months, with the largest gains to be recorded for the better grades of paper. In marked contrast to the situation last summer, speculation is almost entirely absent, buyers holding commitments to actual needs. Orders are increasing each month, however, and the already advanced level of prices has assured a good inventory appreciation as the spring season progresses, according to a survey of the paper industry, which has just been completed by Dun & Bradstreet, Inc.

Volume of pulp and paper production is 20 to 50 per cent ahead of that of a year ago, and is maintaining the pace set by the general recovery movement. Manufacturers in the Northwest report steady capacity schedules which have been maintained for the last eight months. Factory employment is increasing, now being 25 to 35 per cent larger than in March, 1933, with prospects for more frequent additions to pay rolls in the near future. Specialties are being produced in quantities as high as 100 per cent over last year's, while general purpose wrapping papers, especially kraft, are nearly double the shipments of that period. Fruit wrappers are being turned out in quantities fully 50 per cent above last season's, in anticipation of an unusually good yield in various fruit districts.

While production of newsprint in the United States in 1933 declined to 946,374 tons from 1,006,569 in 1932, or a drop of 6.2 per cent, the increase in the output of Canadian mills to 2,017,004 tons in 1933 from 1,907,566 the previous year, or a gain of 6.2 per cent, and larger contributions by mills of Mexico and Newfoundland enabled a small increase to be shown for the year. For, the total North American output of newsprint in 1933 was 3,250,579 tons, as compared with 3,207,291 tons in 1932, an increase of 1.3 per cent.

Since the first of the current year, production of newsprint has been increasing. January output for the United States and Canada was 26 per cent larger than in January, 1933, and in February the gain was 28 per cent, with the total production of 247,000 tons marking the largest February output in four years. In the paper board division, which is one of the largest classes in point of tonnage, output has receded from around 75 per cent of capacity in the third quarter of 1933 to about 70 per cent of capacity, but current orders indicate wider operations in the next few weeks.

Aggregate sales in the wholesale division for the first quarter were 35 to 50 per cent more than during the same period of 1933. Orders for print paper gained about 25 per cent, while orders for wrapping paper rose at least 45 per cent. Staple lines, such as bond and ledger paper represented the bulk of the sales, but the fancy papers for direct mail advertising still are showing only small percentages of gain. Wrapping paper, paper bags, napkins, and the cheaper lines of print paper undoubtedly form the bulk of the current movement. Sales to the printing trade during the last six months have reached a better total than has been recorded in more than two years.

The coarse paper market is improving, the betterment including kraft, kraft specialties, tissues, and other coarse paper lines. Fine papers are moving in fair quantities, with an increase in the size of the orders.

Books and covers now appear to be out of the maze of price readjustment problems, and demand has become stronger during the past month, while in the ground wood markets, orders of any consequence are just beginning to appear. The improvement in the entire market is having its effect on newsprint, orders for which have been on the increase during the last sixty days, and there is a heavier movement of the cheap grades of paper in nearly all

branches. While distributors are enthusiastic concerning the steady rise of volume during the spring months, retailers are not inclined to increase inventories to any extent.

During the latter half of 1933, prices advanced rapidly and rather abrupt'y in many instances. It is estimated that common grades and low grades of fine paper are up 40 to 50 per cent, and high grade fine papers from 10 to 25 per cent from the 1933 comparative level. Newsprint was the only exception, as there has been no alteration in the last two years, the price continuing at $40 a ton. The general price level now stands at 10 to 30 per cent above that of March a year ago, with stability strongly in evidence since the adoption of the NRA code.

Collections in most districts have improved only slightly and are not in keeping with the progress made in sales. Among manufacturers, collections are good, due undoubtedly to the class of trade solicited, the terms, and the close attention being given to the extension of credit.

By the final quarter of 1933, the financial condition of most members of the trade had improved sufficiently to bring bankruptcies almost to a halt, and despite the heavy rate of mortality during the early months of the year, the total set down for manufacturers was only 10, or an increase of 1 over 1932. Most of these failures were among the smaller mills, as the monetary loss totalled but $1,944,189, against the all-time high of $2,613,450 in 1932.

The distributive branch of the industry made a more favorable showing, as the number of failures fell to 16, or less than half that of 1932, and the involved liabilities dropped by nearly the same percentage, receding from $1,034,347 to $520,760. For the entire industry, the number of failures in 1933 was 26, against 44 in 1932, a decline of 40.9 per cent, while defaulted indebtedness was $1,944,189, as compared with the record high of $2,613,450 in 1932, a decline of 32.4 per cent.

New Paper House In Baltimore

The Calvert Paper Company has been organized with offices and warehouse at 305 East Federal Street in the Fallsway Buildings, just East of Guilford Avenue, Baltimore, Md. The new firm will distribute fine and wrapping paper, paper specialties and paperboard.

It is headed by Carroll T. Gardner, who was formerly assistant sales manager of the Elk Paper Manufacturing Company, Childs, Md., and prior to that, was connected with the Marley Paper Manufacturing Company for a number of years. Practically all of Mr. Gardner's business career has been spent in the paper business, having been in the manufacturing as well as the selling branches.

In an earlier report it was stated that Allen Clark was connected with the company and that it would manufacture paper boxes. These reports, however, are incorrect.

It is announced this company will serve Pennsylvania, Maryland, Delaware, District of Columbia and Virginia, and, is distributing for Curtis & Brother of Penna. of Mt. Holly Springs, Pa., White River Paper Mills, Inc. of Indianapolis, Ind., Ireland & Taub Paper Company, Inc., of New York, in addition to handling some of the lines of the following Mills: Union Bag and Paper Company of New York, and the Bayless Pulp and Paper Company, of Austin, Pa. From time to time announcements will be made of additional lines this firm will distribute.

Philemon Paper Company to Resume

[FROM OUR REGULAR CORRESPONDENT]

BROWNVILLE, N. Y., March 26, 1934—A reorganization of the Philemon Paper Company has been effected here and plans call for a resumption of operations within the next few days. John J. Warren, prominent in paper mill circles of this section for several years, will be identified with the concern as manager in addition to supervising production of specialty and wrapping paper. The property formerly housed the Harmon Paper Company and was acquired several months ago by a syndicate of Syracuse business men headed by Elmer T. Eshelman and Lester G. Boysen. After taking over the plant the machinery was thoroughly overhauled by the new owners in order to place it in good condition and last fall operations were conducted for a brief time when a small quantity of paper was produced. It is understood, however, that financial troubles arose at that time as the result of heavy liabilities and these were straightened out last week by a reorganization of the company. The plant will have a capacity of about 50 tons daily.

A certificate filed this week with the county clerk revealed a discharge of the mortgage held by the Harmon Paper Company and given by the Philemon Paper Company on the property. A settlement of a judgment of $77,986.23 held by the Northern Trust Co. against the Harmon Paper Company; a satisfaction of a $42,155.25 judgment held by John J. Warren against the Harman Paper Company a settlement of a mechanic's lien of $628.03 held against the Philemon Paper Company; discharge of a mechanic's lien of $443.08 held by the Algonquin Paper Company against the Philemon Paper Company; a satisfaction of a judgment of $6,866.45 held by Mr. Warren against the Harmon Company and the discharge of a lien of $107 held by the Watertown Engine and Machine Company. Announcement was also made that a settlement of over due taxes on the property had also been made. The concern plans to use a patented process in some grades to utilize waste waxed papers for stock. The officers of the company will include Lester G. Boysen, president; E. T. Eshelman, treasurer; D. E. Alvord, secretary. John J. Warren, general manager served as head of the Harmon Paper Company and the Warren Parchment Company for several years and was also vice-president and technical expert for the St. Regis Paper Company for some time. He has also developed a number of patents on machinery and processes for the making of paper.

Specifications Committee to Report

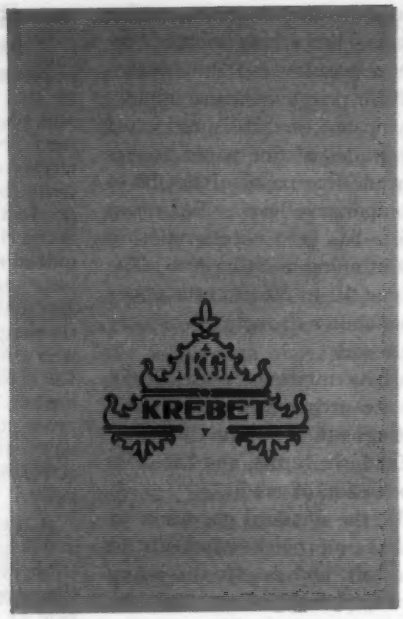
[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., March 28, 1934—The paper specifications committee for the annual supply of paper for the Government Printing Office beginning July 1, expects to be able to make its report to the Joint Congressional Committee on Printing about the middle of April.

It is expected that bids for the annual supply will be asked about the middle or last of May, with awards to be made a week after the bid openings, the usual custom.

It is not yet known if any changes will be made in the bids asked as the result of the experience the committee had in awarding bids for the three months supply. This is a matter that the committee will take under advisement before asking for the annual supply bids.

Only one protest was received by the Joint Congressional Committee as the results of awards made for the three months supply. It was generally conceded, that the committee made as fair awards as possible under existing conditions.



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Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

Analysis of Rosin*

Rosin is the residue obtained after distilling off the volatile matter from gum turpentine. It is graded according to color. The higher the temperature to which the distillation is carried, the darker is the resulting product. The common commercial grades, in the order of their color, from the palest and best to the cheapest and darkest, are: WW, WG, N, M, K, I, H, G, F, E, D, and B. Grades G, F, and E are most frequently used in the paper industry. The acid number is generally considered the best index, in selecting rosin for making rosin size. Other tests which give valuable data for certain purposes are saponification number, unsaponifiable matter, toluol-insoluble matter, and ash.

Sampling

Rosin is usually received in wooden barrels or metal drums containing a net weight of 280 pounds. These containers are stripped off, leaving a solid block of rosin. The sample for test should be taken from approximately the center of the block. Ordinarily it is sufficient to sample two containers selected at random from a shipment. In cases of dispute the number of containers to be sampled shall be mutually agreed upon. The sample shall be reduced to laboratory size by crushing to pass a half-inch sieve, mixing, quartering, and grinding. The final laboratory sample shall be prepared immediately before analysis and shall consist of approximately 200 grams. It shall be ground to pass a No. 10 sieve, mixed thoroughly and placed in a wide-mouthed bottle of such a size that it will be completely filled with the powdered rosin.

Color Grade

To determine the color grade of rosin a set of standard cubes must be available. These may be obtained from D. C. Campbell, Jacksonville, Fla.

The rosin under examination is melted and cast in a sheet iron mold to form a cube of the same dimensions as those in the standard set. Care must be taken to heat the rosin only just enough to pour, as overheating darkens the color. After the cube has solidified it is compared as to color with the standards by looking through the cubes in daylight toward a neutral sky (not blue).

Acid Number

Dissolve 3 grams of the powdered rosin by warming with about 100 cc. alcohol which has previously been neutralized by adding a few drops of phenolphthalein solution and then 0.1 N NaOH until it is faintly pink. When the rosin has dissolved, titrate the solution to a pink color with 0.5 N NaOH, adding more phenolphthalein if necessary. Express the result in the terms of milligrams of KOH (not NaOH) consumed per gram of rosin. This is the Acid Number. It is also sometimes customary to report the percentage of acid. This should be calculated as abietic acid.

Calculations: 1 cc. 0.5 N NaOH = 28.06 mg. KOH = 0.1511 gram abietic acid.

Saponification Number

Weigh duplicate 2-gram portions of the powdered rosin into 300-cc. Erlenmeyer flasks. Add to each 25 cc. of 0.5 N alcoholic KOH solution. In a third flask place 25 cc. of the 0.5 N alcoholic KOH (as a blank determination). Connect the flasks to reflux condensers and boil for 2 hours, swirling them from time to time to prevent the rosin from sticking to the sides of the flask above the liquor line. Cool and titrate the contents of each flask with 0.5 N HCl and phenolphthalein to the disappearance of the pink color. From the titration of the blank subtract the titration of each sample and report the number of milligrams of KOH consumed by 1 gram of the rosin as its Saponification Number.

Calculation: 1 cc. 0.5 N KOH = 28.06 milligrams.

Ester Number

The ester number is the difference between the saponification number and the acid number.

Unsaponifiable Matter

(a) In Alcoholic Solution: Saponify 5 grams of the sample by boiling for 2 hours under a reflux condenser with an excess (about 50 cc.) of 0.5 N alcoholic KOH. Evaporate most of the alcohol, add about 100 cc. of water and extract in a separatory funnel with acid-free ether as in the determination of free rosin in rosin size.

(b) In Aqueous Solution: Saponify 5 grams of the sample by boiling for 4 hours under a reflux condenser with 1 gram of Na_2CO_3 dissolved in 50-75 cc. of water. Cool the solution and extract with acid-free ether as above.

Note: The residue as determined in (a) represents the true unsaponifiable matter. The residue obtained in (b), however, represents more nearly the rosin which is unacted upon in determining the acid number and, since rosin size is made with soda ash, it is considered to be the unsaponifiable matter so far as size-making purposes are concerned.

Ash

Ignite 5 grams of the powdered rosin in a weighed platinum crucible to a white or light gray residue. Cool in a desiccator and weigh. Calculate to percentage.

* This method has been approved by the TAPPI Non-Fibrous Materials Testing Committee. Suggestions and criticisms should be sent to R. G. Macdonald, 122 East 42nd Street, New York, N. Y.

Toluol-Insoluble Matter[1]

The toluol-insoluble matter is a measure of foreign dirt—chiefly sand, chips, dirt and bark. In many cases the determination of dirt is not necessary. Where it is important, the following method should be used:

Place 50 grams of the freshly powdered sample in a 300-cc. beaker, add 150 cc. of toluol, free from water and non-volatile residue and dissolve the sample with the aid of heat and occasional shaking. When no particles of rosin are visible, filter at once through a porcelain Gooch crucible which has been previously prepared with a mat of pure, well washed asbestos, and has been finally washed thoroughly with the toluol, dried in the oven at 105 deg. C. for 30 minutes, cooled in a desiccator, and weighed. If the rosin filtrate is not clear, return it through the crucible until clear, finally washing the residue and the outside of the crucible free from rosin with additional hot toluol. Dry the crucible and contents to constant weight in the oven at 105 to 110 deg. C. (one hour usually suffices), cool in a desiccator, weigh, and calculate the percentage of toluol-insoluble matter.

[1] Am. Soc. for Testing Mat. Standard D 269-30.

Application of Elementary Statistical Methods in Testing of Pulp and Paper

The following corrections should be noted in connection with the above entitled article printed in the Technical Section of the issue of the PAPER TRADE JOURNAL of December 21, 1933. The pages referred to are the TAPPI Section pages.

Page 298
Col. 1, Fig. 1. Title should read
"Limits $\pm$ 0.67 σ enclose" etc.
Col. 2, under tabulation of symbols
for σd read σ_d
for $\bar{x}$ read $\overline{X}$

Page 299
Col. 1, eq. 1, left hand member should be $\overline{X}$
eq. 1a for $\bar{x}$ read $\overline{X}$
Col. 2, paragraph 4, line 2 and also eq. 7, for $\dot{x}_1$, $\bar{x}_2$ read $\overline{X}_1$, $\overline{X}_2$
eq. 6 and 7, for σd read σ_d.
5th line from bottom for $\bar{x}_1$, $\bar{x}_2$ read x_1, x_2

Page 302
Col. 1, in the numerical work, for X_1, X_2, read $\overline{X}_1$, $\overline{X}_2$
Col. 2, the second term in the equation at top of column should be $\left(\frac{604}{10}\right)^2$
in fifth line up, for x read $\bar{x}$

Page 303
Col. 1, lines 1 and 9, for x read $\bar{x}$

TAPPI Notes

The Coating Committee has prepared a compilation of questions and answers relating to coating problems and a number of abstracts of articles and a list of coated paper patents which may be obtained upon request of the Secretary of the Technical Association of the Pulp and Paper Industry, 122 E. 42nd Street, New York, or from the chairman of the Coating Committee, J. J. O'Connor, Mead Corporation, Chillicothe, Ohio.

Dean W. Newell, formerly superintendent of the United Paper Board Company, Wabash, Ind., is now with the Chicago Coated Board Division of the Container Corporation of America, Chicago, Ill.

J. A. Fincken, formerly assistant to the President of the Advance Bag and Paper Company, is now in the cost engineering department of the A. P. W. Paper Company, Albany, N. Y.

Erik F. Kruse, engineer, United Paper Mills Company, Copenhagen, Denmark, is now visiting paper mills in the United States.

O. E. Anderson, formerly assistant sulphite superintendent of the Marinette & Menominee Paper Company, Marinette, Wis., is now sulphite superintendent of the Otis Mill of the International Paper Company, Chisholm, Maine.

The American Leather Belting Association, 41 Park Row, New York, has recently published a book entitled, "Fifty Reports on Mechanical Power Transmission from Motor Drive to Industry," by Robert W. Drake. These reports were reviewed at the annual meeting of TAPPI.

F. L. Mitchell, formerly assistant manager of operations of the Abitibi Power and Paper Company, Toronto, Ontario, is now assistant to the general superintendent of the Canadian International Power and Paper Company, Three Rivers, P. Q.

Paavo Kivi, formerly superintendent of Rauma Wood, Ltd., Rauma, Finland, is now assistant technical manager of the sulphite mill of Kajaanin, Puutavara, O/Y, Finland.

Gust Johanson, formerly superintendent of Celulosa Cubaba, is now sulphite superintendent of the Shaffer Pulp Company, Tacoma, Wash.

J. P. Lewis Co. Joins TAPPI

The company most recently to become a corporate member of the Technical Association of the Pulp and Paper Industry is the J. P. Lewis Company of Beaver Falls, N. Y., manufacturers of wood pulp, manila and jute fiber board, groundwood pulp, index bristols, post card, ticket bristols, manila tag and folder, lightweight board and specialties.

The J. P. Lewis Company was formed about fifty years ago and developed from groundwood pulp mills at Beaver Falls, N. Y.

The first match board made for the Diamond Match Company, who started the book-match business in the United States; the first satisfactory bottle-cap board; and Beaverboard, one of the first types of wall board, were all developed by the J. P. Lewis Company. These are three outstanding contributions to the paper industry.

The company will be represented in the Technical Association by Henry Perry who has been a member of TAPPI for several years.

U. S. Envelope Co. Elects Officers

[FROM OUR REGULAR CORRESPONDENT]

SPRINGFIELD, Mass., March 27, 1934—Attorney Ralph W. Crowell of West Springfield was elected general counsel for the United States Envelope Company at its annual meeting held last week. He was also elected a director of the company. The old board of officers was re-elected as follows: President, Willard E. Swift of Worcester; First Vice-President and General Manager, Eldon V. Johnson of Springfield; Second Vice-President, Ernest M. Whitcomb of Amherst; Third Vice-President, Robert L. Allison of Longmeadow; Assistant-Treasurer, Wilfred M. Wharfield of Longmeadow; Assistant-Treasurer and Secretary, M. F. Peterson of Longmeadow. William O. Day, Treasurer of the company for many years, was re-elected.

A Study of Wood Pulp Fractionation*

By Otto Kress[1] and Forrest W. Brainerd[2]

Abstract

A series of chemical and mechanical pulps has been fractionated, and the individual fractions tested for chemical constants and physical properties. Both chemical and physical properties have been shown to become poorer in successively shorter fractions of unbeaten chemical pulps. The strength of mechanical pulps increases with decreasing fiber lengths, and only the finest (through 200 mesh) fraction approximates the strength of the original pulp.

The effect of beating on fractional composition of four chemical plups has been investigated. They have been shown to react very differently to beating, and in the case of the bleached pulps, at least, their ability to resist cutting seems to be related to their purity.

The literature on fractionation of wood-pulps has increased rapidly in the past two or three years, but most of the contributions have dealt with fractionation as a method of evaluation for groundwood pulps. The value of this method of analysis is obvious, for fiber length represents the chief variable in these pulps. In the field of chemical pulps, the usefulness of fractionation is less apparent, for fiber length is only one of several variables which determine their characteristics, but the authors have considered it worth while to carry out a study to determine first, to what extent the chemical and physical properties of unbeaten chemical pulps vary with fiber length, and second, to what extent fiber length is altered by beating in a laboratory beater.

Received February 5, 1934.

* Presented at the annual meeting of the Technical Association of the Pulp and Paper Industry, New York, N. Y., Feb. 19 to 22, 1934.

Note: Presented to the Institute of Paper Chemistry, Appleton, Wisconsin, in partial fulfillment of the requirements for the degree of Master of Science.

[1] Member TAPPI, technical director, Institute of Paper Chemistry, Appleton, Wis.

[2] Student, Institute of Paper Chemistry, 1932-1933.

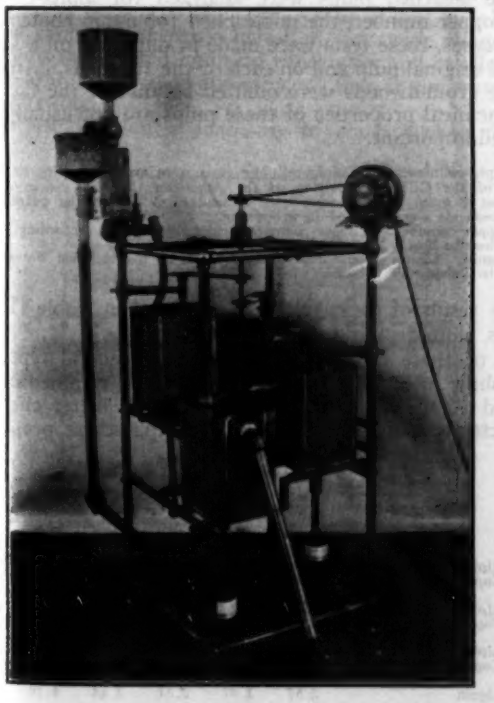

Fig. 2

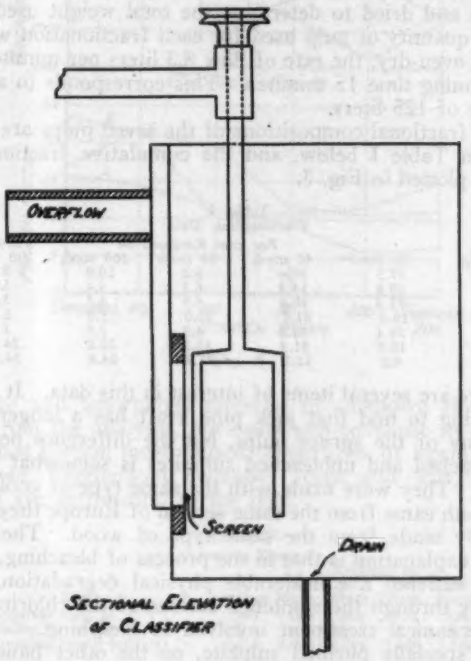

Fig. 1

Through the courtesy of the Mead Corporation, Chillicothe, Ohio, a four-screen fractionator, or classifier, was made available for this work. It consists of four square copper boxes of 10 liters capacity each, so arranged in a frame that a stream of water flows through the four boxes consecutively. Each box is provided with a wire screen 4 inches in diameter, attached to one side. A fork-shaped vertical agitator, belt driven at 800 r.p.m. from a central shaft, is located in front of each screen to prevent matting. Each box has an outlet at the bottom, closed during the runs, through which the pulp retained by the screen can be filtered out on a fine cloth. This cloth is stretched tightly across a removable cup which is screwed to the bottom of the suction leg attached to the box. Details of construction are shown in Fig. 1, and the complete assembly in Fig. 2.

The instrument is simple and comparatively inexpensive, but it provides reasonably sharp separations, and is capable of checking itself almost exactly on duplicate runs.

A series of seven pulps, covering with a fair degree of completeness the whole field of wood-pulps, was chosen for this study, as follows:

PULP	DESCRIPTION	SOURCE
A	Bleached spruce sulphite	Germany
B	Unbleached spruce sulphite	Finland
C	Specially purified spruce sulphite	United States
D	Bleached birch sulphate	Canada
E	Unbleached jack pine kraft	United States
F	Free groundwood	Norway
G	Special slow groundwood	Canada

Pulps A, B and C were received in the form of dry sheets, D, E, F and G in the form of wet laps. The chemical pulps were soaked overnight, disintegrated for 7500 revolutions in the British standard disintegrator, the excess water drained off and 4 portions equivalent to 10

grams each, oven-dry, weighed out. Two of these were dried to determine the weight of stock used, and the other two stirred up in a liter of water each.

The groundwoods were soaked overnight, disintegrated for 75,000 revolutions and diluted to 1 per cent consistency. Two one liter portions were fractionated, and two others filtered and dried to determine the total weight used.

The quantity of pulp used for each fractionation was 10 grams, oven-dry, the rate of flow 8.3 liters per minute, and the running time 15 minutes. This corresponds to a total volume of 125 liters.

The fractional compositions of the seven pulps are tabulated in Table I below, and the cumulative fractionation curves plotted in Fig. 3.

Table I
Fractionation Data

Pulp	Per cent Retained on 20 mesh	40 mesh	80 mesh	200 mesh	Through 200 mesh
A	57.5	14.4	8.2	10.0	9.9
B	69.8	14.2	6.3	4.4	5.3
C	75.9	10.4	5.9	4.7	3.1
D	18.2	61.7	10.0	5.0	5.1
E	78.4	10.8	4.9	2.9	3.0
F	18.5	11.3	23.3	22.8	24.1
G	8.2	11.1	21.9	24.8	34.0

There are several items of interest in this data. It is not surprising to find that jack pine kraft has a longer fiber than any of the spruce pulps, but the difference between the bleached and unbleached sulphites is somewhat unexpected. They were made with the same type of cook, and since both came from the same section of Europe they were probably made from the same type of wood. The most logical explanation is that in the process of bleaching, Pulp A has suffered a considerable physical degradation, presumably through the combined actions of the chlorine and the mechanical treatment involved in bleaching.

The specially purified sulphite, on the other hand, has a fiber length second only to that of the kraft, and the fraction which passes the 200 mesh wire is hardly more than half that of the corresponding fraction of the unbleached sulphite, even though the former has been bleached to a very high color. While this might be explained by assuming that the extra purification to which the pulp of high alpha content has been subjected has removed most of the finest fraction, yet the tremendous difference between this and the other bleached sulphite suggests that the former has been subjected to a screening similar to that used in this study.

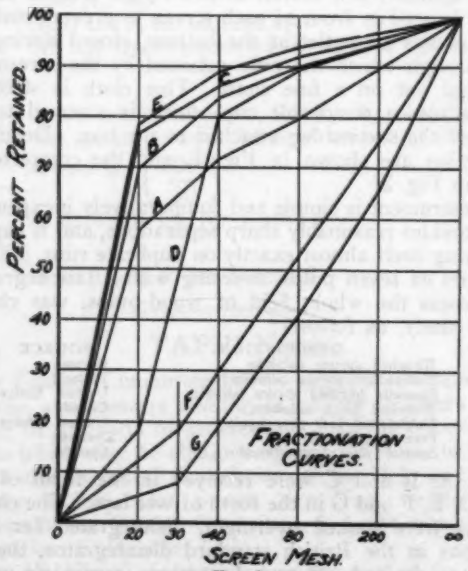

Fig. 3

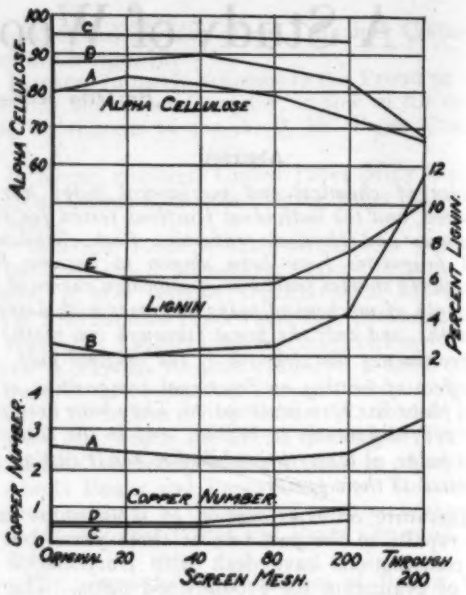

Fig. 4

The birch pulp, of course, has a much shorter fiber than the spruce and pine pulps, but the quantity of very finely divided material is considerably less than that of the bleached sulphite.

The relation of the groundwood curves to each other could have been predicted qualitatively from the freeness, i.e., the pulp of lower freeness has the shorter average fiber length. Note that the intermediate fractions of the two pulps are practically identical. This suggests that fractionation on a single screen may be sufficient to characterize a groundwood pulp.

The bleached pulps were analyzed for alpha-cellulose and copper number, the unbleached for lignin content. In most cases, these tests were made in duplicate on a sample of the original pulp and on each of the fractions. Analyses of the groundwoods were omitted because of the fact that the chemical properties of these pulps are not usually considered important.

1. Alpha-cellulose. The alpha-cellulose tests were made according to Method 4 of the Cellulose Division of the American Chemical Society, except that 1 gram samples were used instead of 3 grams; the quantities of chemicals were reduced in proportion.
2. Copper number. Copper numbers were determined according to the Schwalbe-Braidy method.
3. Lignin. Lignin determinations were made by the modified Forest Products Laboratory method.

The result of these tests are tabulated in Table II, and curves plotted in Fig. 4.

All of these curves are of the same general type, i.e., they show in most cases that the fractions retained on the 20 and 40 mesh screens have appreciably better chemical characteristics than the original, and that these properties

TABLE II
Chemical Constants

Pulp	Test	Original	Retained on 20 Mesh	40 Mesh	80 Mesh	200 Mesh	Through 200 Mesh
A	Alpha-cellulose	79.4	83.9	82.1	79.1	72.7	66.7
	Copper number	2.55	2.44	2.33	2.30	2.46	3.32
D	Alpha-cellulose	87.7.	88.2	90.0	86.7	83.0	67.7
	Copper number	0.58	0.57	0.58	0.77	0.99	.....
C	Alpha-cellulose	95.2	95.1	95.1	94.3	93.4	.....
	Copper number	0.46	0.48	0.47	0.52	0.64	.....
B	Lignin	2.57	1.97	2.31	2.44	4.19	11.60
E	Lignin	6.74	5.91	5.56	5.71	7.52	10.16

become progressively poorer as the fiber length decreases, with a very marked falling-off in the fraction which passes through the 200 mesh screen. The curves which represent impurities—lignin and copper number—therefore pass through minimums at the 20 or 40 mesh fractions, and the curves which represent degree of purity—alpha-cellulose—pass through maximums at the same points.

In the instances where the 40 mesh fraction shows better characteristics than the 20 mesh, the most probable explanation is that all the shives of the original pulp are retained on the 20 mesh screen, with a consequent reduction in the purity of this fraction.

The color of the different fractions is a variable which has not been measured quantitatively, but apparently has some significance. An inspection of hand sheets made from the individual fractions shows the color to vary in the same manner as the alpha-cellulose content, i.e., the coarsest fraction is noticeably brighter than the original pulps, and the succeeding fractions become darker and duller as the fiber length decreases. The colors of the finest fractions vary from a very dark brown, almost black, in the case of kraft, to a medium gray in the case of the specially purified sulphite. Bleached sulphite A has a dark brown final fraction, resembling the color of a raw kraft pulp.

There are two possible explanations for the increased quantities of non-cellulosic material which chemical tests show to be present in the 80 and 200 mesh fractions. One is that a small amount of the finest maaterial, of which the chemical constants are very poor, still remains in these fractions. The operating procedure which was adopted for this study was chosen to eliminate this very thing, and microscopic examination indicates that fine material has been completely removed. Any overlapping of sizes which may occur is due to longer fibers silpping through from the preceding screen, a condition which would improve rather than harm the chemical constants. Therefore, the increased quantities of non-cellulosic material found in the 80 and 200 mesh fractions can be explained most logically in terms of the immature fibers which the microscope shows to be present. The analyses of Ritter and Fleck provide support for this suggestion, for with almost no exceptions they found lignin to run higher and cellulose to run lower in springwood and sapwood than in summerwood and heartwood.

The last fraction is made up of short broken fibers,

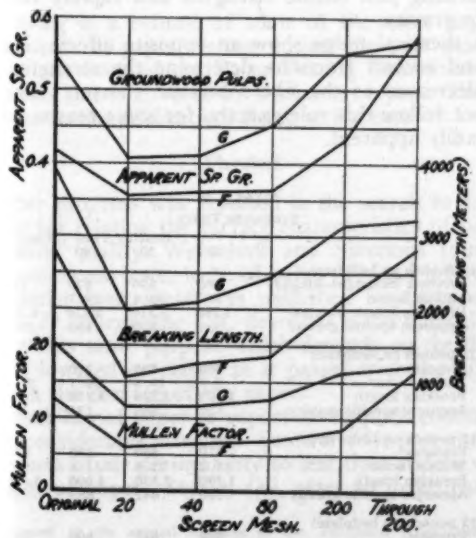

Fig. 5

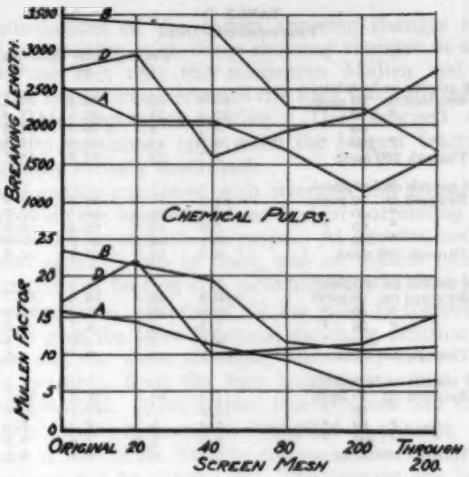

Fig. 6

fibrillae and amorphous material of unknown character, but, from the analyses, obviously non-cellulosic in nature. This last portion must consist of particles of lignin, hemicellulose, degenerated cellulose, rosin and dirt, all of which are detrimental to the pulp.

TABLE III
Strength Tests

Pulp	Test	Original	Retained on 20 Mesh	40 Mesh	80 Mesh	200 Mesh	Through 200 Mesh
A	Apparent spec. gr.	.590	.580	.601	.575	.601	.725
	Mullen factor	15.6	14.4	11.3	9.1	5.7	6.6
	Breaking length (meters)	2,510	2,080	2,090	1,680	1,140	1,640
B	Apparent spec. gr.	.635	.606	.624	.624	.635	.855
	Mullen factor	23.2	18.9	19.4	11.6	10.7	11.1
	Breaking length (meters)	3,450	2,810	3,320	2,220	2,220	1,680
D	Apparent spec. gr.	.570	.570	.530	.561	.570	.776
	Mullen factor	16.8	21.6	10.1	10.6	11.3	15.2
	Breaking length (meters)	2,730	2,960	1,600	1,940	2,150	2,760
F	Apparent spec. gr.	.415	.354	.361	.364	.435	.580
	Mullen factor	12.7	6.1	6.6	7.0	8.6	16.7
	Breaking length (meters)	2,800	1,080	1,260	1,360	2,130	2,820
G	Apparent spec. gr.	.542	.406	.411	.432	.552	.569
	Mullen factor	20.2	11.4	11.8	12.7	16.5	17.4
	Breaking length (meters)	3,890	1,990	2,100	2,460	3,180	3,240

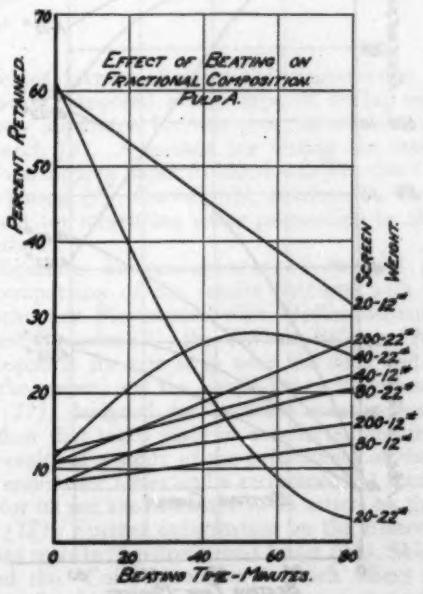

Fig. 7

TABLE IV
FRACTIONATION DATA

Pulp		Beating Time (Minutes) 0	20	40	60	80
A	(12 pounds on bedplate)					
	Retained on 20 mesh	60.0	52.2	46.4	39.2	30.7
	" " 40 "	12.4	14.6	17.1	19.4	22.9
	" " 80 "	8.1	9.1	10.5	11.8	13.6
	" " 200 "	10.8	11.8	13.5	14.5	16.1
	Through 200 mesh	8.7	12.3	12.5	15.1	16.7
A	(22 pounds on bedplate)					
	Retained on 20 mesh	61.7	39.2	20.9	9.0	3.1
	" " 40 "	11.2	19.3	26.7	27.7	24.9
	" " 80 "	7.8	11.9	15.3	18.0	20.7
	" " 200 "	10.8	14.7	19.2	22.8	27.2
	Through 200 mesh	8.5	14.9	17.9	22.5	24.1
B	(12 pounds on bedplate)					
	Retained on 20 mesh	70.8	66.5	64.6	59.7	58.0
	" " 40 "	13.6	15.9	17.4	17.9	19.4
	" " 80 "	5.1	5.9	6.7	7.0	7.4
	" " 200 "	4.6	5.5	6.2	6.8	7.4
	Through 200 mesh	5.9	6.2	5.1	8.6	7.8
B	(22 pounds on bedplate)					
	Retained on 20 mesh	71.3	64.3	59.2	54.1	51.0
	" " 40 "	13.8	17.2	19.1	20.6	21.4
	" " 80 "	5.1	6.5	8.2	8.1	8.5
	" " 200 "	4.7	5.8	7.4	8.8	10.2
	Through 200 mesh	5.1	6.2	6.1	8.4	8.9
C	(22 pounds on bedplate)					
	Retained on 20 mesh	77.6	69.9	63.6	58.2	52.1
	" " 40 "	8.8	11.7	13.6	14.8	15.8
	" " 80 "	5.9	7.4	8.6	9.6	10.4
	" " 200 "	4.7	6.4	7.5	9.2	10.5
	Through 200 mesh	3.0	4.6	6.7	8.2	11.2
	Freeness (Schopper-Riegler)	880	870	850	815	775
D	(22 pounds on bedplate)					
	Retained on 20 mesh	27.3	21.5	15.4	11.5	....
	" " 40 "	52.3	56.3	59.7	61.3	....
	" " 80 "	5.0	6.1	7.2	8.6	....
	" " 200 "	9.5	10.0	10.5	11.5	....
	Through 200 mesh	5.9	6.1	7.2	7.0	....
	Freeness (Schopper-Riegler)	875	860	845	810	....

It seems evident that the color and chemical constants of bleached pulp could be materially improved by fractionation, provided the mechanical difficulties of carrying this out on a mill scale could be overcome. Possibly this is being done commercially even though the authors have seen no published record of it.

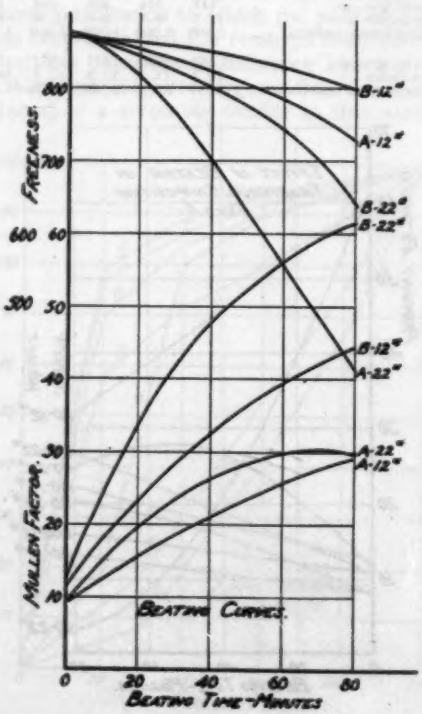

FIG. 9

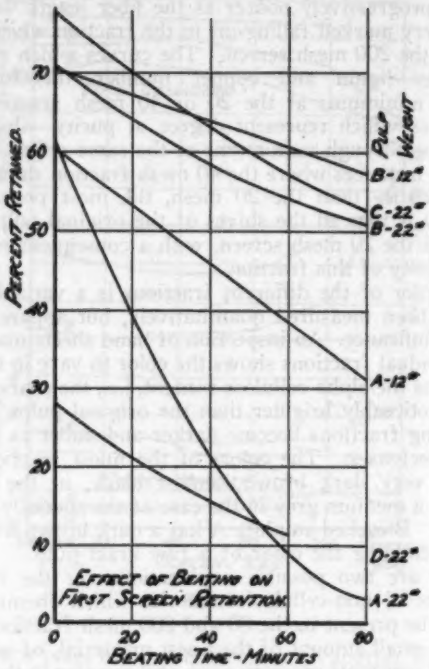

FIG. 8

The British sheet making equipment was used for strength tests. The samples of pulp were disintegrated for 75,000 revolutions, fractionated, and made into hand sheets, which were then conditioned at 65 per cent relative humidity and tested for bulk, Mullen and tensile strengths.

The results are recorded in metric units. The advantages of the Metric system are well known; everything but precedent favors its use, particularly for research.

The results of these strength tests are given in Table III and Figs. 5 and 6.

These results in general check those obtained by other investigators. It seems to be characteristic of groundwood fractions of increasing degrees of fineness to show increasing bursting and tensile strengths and rapidly increasing specific gravity.

The chemical pulps show an opposite effect. Here the first and second fractions determine the strength, which then decreases as the fibers become shorter. The birch does not follow this rule exactly, for some reason which is not readily apparent.

TABLE V
STRENGTH TESTS

Pulp		Beating Time (Minutes) 0	20	40	60	80
A	(12 pounds on bedplate)					
	Freeness (Schopper-Riegler)	880	850	825	810	735
	Mullen factor	8.7	16.4	20.7	25.3	29.0
	Breaking length (meters)	1,280	2,510	3,420	4,250	4,660
	Apparent specific gravity	.531	.610	.650	.684	.721
A	(22 pounds on bedplate)					
	Freeness	880	825	710	560	415
	Mullen factor	9.3	19.4	26.1	29.8	29.6
	Breaking length	1,370	3,330	4,550	5,030	5,220
	Apparent specific gravity	.559	.663	.734	.771	.814
B	(12 pounds on bedplate)					
	Freeness	870	860	850	830	800
	Mullen factor	11.2	22.8	32.6	39.2	43.7
	Breaking length	1,790	3,530	4,800	5,050	5,410
	Apparent specific gravity	.580	.642	.683	.725	.714
B	(22 pounds on bedplate)					
	Freeness	880	845	800	745	640
	Mullen factor	13.1	33.8	48.9	55.1	61.6
	Breaking length	2,210	4,960	6,810	7,520	8,000
	Apparent specific gravity	.585	.673	.740	.770	.792

The final part of this investigation deals with the effect of beating in a 1½ pound laboratory beater on the fractional composition and strength of four chemical pulps. The runs were made with 500 grams of pulp, oven-dry, diluted to 2 per cent consistency, and beaten with 12 pounds or 22 pounds on the bedplate, of which 2 pounds was required to balance the system. Duplicate runs were made for the fractionations and strength tests in order not to accelerate the beating effect by removing more stock than was absolutely necessary during the runs.

The fractionation data and strength tests are given in Tables IV and V, and the corresponding curves in Figs. 7, 8 and 9.

The results recorded above could have been predicted qualitatively from the known fact that increasing the weight on the bedplate increases the rate of cutting and the rate of strength development. This data also serves to emphasize the tremendous difference between the bleached and unbleached sulphites. The bleached sulphite has lost not only a large part of its original strength, but also its ability to resist the cutting action of the beater roll. The extremely rapid rate of decrease in fiber length indicates that the fibers have become brittle, and therefore break very readily under impact. The results indicate that it is impossible to beat the two pulps together effectively—before the unbleached pulp had developed its highest strength the bleached pulp would have been spoiled. This is not a new idea, of course, for the existence of this condition in the beating of mixed furnishes such as sulphite-soda and sulphite-kraft has been recognized for a long time, but the difference between the two sulphites is somewhat unexpected.

The data shows that the specially purified sulphite and the birch sulphate stand up very well under beating, at least in comparison with the other bleached sulphate. The ability of a bleached pulp to resist the cutting action of the beater roll seems to be related to the alpha-cellulose content and copper number.

A comparison of the curves showing changes in fractional composition with those showing changes in strength reveals the fact that the maximum Mullen and tensile strengths are not reached until the fiber has suffered a very considerable degree of cutting. The bleached sulphite reaches its maximum only when the largest fraction has been almost entirely destroyed.

Fractionation combined with strength and freeness tests may provide the long-sought method of correlating laboratory and mill treatments of pulps. At present, only freeness and strength can be used, and an infinite number of combinations of beating and jordaning can be used to attain a given freeness. However, if the pulp is treated in the beater to give the same freeness, the same fractional composition and the same strength, assuming, of course, that this is possible, then the two treatments could be considered identical. In any case, fractionation can eliminate one variable which cannot be evaluated at present.

There is almost no limit to the extent to which a study of this sort can be carried on. The present one is admittedly incomplete, but the authors submit it with the hope that their findings may be considered sufficiently interesting to inspire further work along these lines.

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Developments in Paper Testing During 1933*

By B. W. Scribner[1]

Following is a resumé of some of the more important developments in paper testing during the past year. The development work of the Paper Testing Committee is not included as this is covered by a separate report. The numbers refer to the publications listed at the end.

Physical

Further progress was reported in the search to find test methods for relating the surface characteristics of paper to its printing quality. Wehmhoff and Simmons found the Bekk smoothness tester to be of value *(1)*, and information on a similar instrument was published by Campbell and Masten *(2)*. Flemming *(3)*, describes a mechanical feeler used for this same purpose which depends on the distance a ball is lowered or raised as it passes over the hills and valleys in the surface of the paper.

Permeability of paper to vapors and liquids continued to receive considerable attention. Stoewer *(4)*, presented data on relations of air permeability to test time and to various properties of paper. Staedel *(5)*, after an investigation of the different factors affecting the measurement of vapor transmission, proposed a new type of testing instrument, and a new apparatus for this purpose was described also by Holwech *(6)*. A method for testing the resistance of butcher's wrapping paper to blood was described by Libby and Parkinson *(7)*. Currier *(8)*, developed a new type of instrument for measuring water permeation by the electrolytic method.

Developments in measurement of flexural properties were: comparison of the results obtained with the Naumann-Schopper Flexometer with Mullen bursting values by Ribiere-Raverlat *(9)*; the Witham-Bellows *(10)*, device which supports the test strip near the ends and applies a load at the center; and the Smith-Taber Precision Stiffness Tester *(11)*, designed for accurate measurement of the plastic flow that takes place in a deflected specimen.

The results of a study of the peformance of the M. I. T. folding endurance tester and a recommended standard procedure for its use are contained in an article by Snyder and Carson *(12)*. Further information on the Elmendorf tear tester was reported by Brecht and Imset *(13)*. Shiefer *(14)*, described the "Compressometer," which offers means of evaluating the thickness, compressibility, and compressional resilience of textiles, and other materials, including paper.

* Presented at the annual meeting of the Technical Association of the Pulp and Paper Industry, New York, N. Y., Feb. 19 to 22, 1934.

[1] Chairman, Paper Testing Committee, Technical Association of the Pulp and Paper Industry, Bureau of Standards, Washington, D. C.

Optical

New instruments for testing color were described by Edge *(15)*, and by Forrest *(16)*. Davis *(17)* discussed the available instruments for measurement of opacity and describes a new form of instrument for contrast-ratio measurement. Another opacimeter which measures the light transmitted was described by Maass and Richardson *(18)*. Klinghardt proposed a new instrument for measuring gloss and differentiated between gloss and smoothness.

A review of recent developments in fiber microscopy by Calkins *(20)*, reveals advance in this field. Auker, Haug, and Stephansen *(21)*, discussed sources of error in the Halse method for volumetric determination of mixtures of groundwood and chemical fibers. Determination of sulphate and sulphite fibers in mixture received much attention: Shaffer *(22)*, described a new stain; Schulze *(23)*, offered improved procedure for use of the Lofton-Merritt strain, and Noss and Sadler *(24)*, contributed an article on use of ultra-violet florescence. Brecht and Helmer, *(25)* discussed the various chemical methods used for percentage of wool.

Chemical

The results of experimental investigation of various methods used for determination of alpha cellulose were reported by Swainy and Bailey *(26)*, and by Lewis *(27)*. The former found the procedure developed by the Bureau of Standards satisfactory, while the latter prefers a modification of the procedure developed by the Division of Cellulose Chemistry, American Chemical Society. Steele *(28)*, described a method for determination of amount of zinc sulphide. A discussion of various qualitative and quantitative methods for determination of gelatin, and recommendations as to choice of them, were contained in an article by Grunman *(29)*.

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(16) Paper Trade J., Nov. 30, 1933.
(17) Paper Trade J., May 11, 1933.
(18) Pulp Paper Can., July, 1933.
(19) Papier-Fabr., Oct. 1, 1933.
(20) Paper Trade J., Jan. 19, 1933.
(21) Papir-J., Dec. 17, 1932.
(22) Ind. Eng. Chem., Anal Ed., Jan. 15, 1933.
(23) Papier-Fbr., Mar. 19, 1933.
(24) Papier-Fabr., July 30, 1933.
(25) Zellstoff Papier, July, August, 1933.
(26) World's Paper Tr. Rev., May 19, May 26, June 2, 1933.
(27) Paper Trade J., Dec. 14, 1933.
(28) Paper Trade J., Aug. 31, 1933.
(29) Papier, Aug. 15, Sept. 15, 1933.

Heat Utilization in Pulp Cooking by the Sulphite Process*

By O. L. Berger[1]

The Subcommittee on Utilization of Heat in Chemical Processes of the Heat and Power Committee sent out questionaires to all TAPPI members connected with the sulphite industry. The purpose of this special inquiry No. 199 was to obtain experience figures on the heat requirements for cooking sulphite pulp by the various methods now used.

We received 29 replies of which one is disregarded as no steam consumption was given by the mill. Twenty-six of the mills cook with direct steam and two use heat exchangers and circulation. Sixteen of the mills have no method for recovering the heat except for what hot water may be obtained from the relief coolers. Seven use Chemipulp process and two the Decker injection method. One mill reported "injection," but as the steam consumption in this case was very high, we did not take it into consideration as a means of recovery. In no case were the digesters insulated.

The reporting mills are scattered all over the country from Northern Ontario to Oregon. The digesters vary in size from 3 to 30 tons and the pulpwood reported was spruce, balsam, jack pine, eastern and western hemlock and fir cooked either separate or mixed.

Some mills make bleached and some unbleached pulp and we are sorry that we did not get any further information on this subject.

From this it may be seen that it is hard to get any comparative figures as the variables are many and quite extreme.

The steam consumption in the 16 mills without any method of recovery varied all the way from 4,250 to 8,500, averaging 6,952 pounds. The Chemipulp mills reported figures from 3,780 to 6.530, averaging 5,049. The two Decker installations reported 4,000 to 5,500, respectively, and the two mills using heat exchangers and circulation averaged 5,250.

It is, of course, to be expected that the steam consumption varies with the various conditions, like the yield of the wood and climate, etc., but it is hard to understand why there are such big differences in mills using the same method of cooking and located near one another. There seems to be plenty of room for improvement in some mills if we judge by the extremely low figures reported by other mills.

We realize fully that this report is hardly conclusive. Too few mills have reported and the variations in local conditions are too large for direct comparison.

What the figures indicate is that there is a saving of around 2,000 pounds of steam per ton of pulp by the use of recovery systems like the three mentioned above.

There seems to be an indication that the large digesters require less steam per ton than smaller ones.

The yield varies from 3.1 to 4.8 pounds per cubic foot digester space, averaging 4.25. Most mills were very close to this average which seems to be the normal for our conditions. What influence chip packing may have on steam consumption we are not in a position to say. As it seems to be hard to blow clean when packers are used we doubt very much if it will be possible to use them under American conditions.

We wish to thank those of you who answered this questionaire for your cooperation and we hope that you will again help this committee should we feel that it is to our mutual interest to get further details.

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Pulp and Paper Industry Literature Review

Abstracts of Articles and Patents Compiled by the Abstracts and Bibliography Committee of the Technical Association of the Pulp and Paper Industry, A. Papineau-Couture, John F. Ohlson, C. E. Peterson and Clarence J. West, Chairman

Copies of United States Patents can be obtained from the United States Patent Office, Washington, D. C., for 10 cents each. Send currency, not stamps.

Paper Specialties

Impregnated Paper Insulating Material. Frederick L. Damarin and Donald A. Harper assignors to Brown and Caine. U. S. pat. 1,911,064 (May 23, 1933).—Paper insulation is impregnated with a hot wax-like material and then cooled to solidify the impregnating material and subsequently immersed in a bath of heated oil and removed and drained after the temperature has fallen somewhat.—A. P.-C.

Distended Fibrous Sheet Material. Cellufoam Corp. Brit. pat. 379,119 (Aug. 25, 1932).—A web of loosely distended fibrous material is produced by distending paper pulp, etc., by foam producers, such as starches and dextrins, egg albumin or saponin, during the beating operation, discharging as a layer and drying without pressure that will alter its form. Apparatus is described.—A. P.-C.

Method of and Apparatus for Treating Paper With a Solution or Suspension Containing Volatile Constituents. S. D. Warren Co. and Osborn M. Curtis. Brit. pats. 375,241 (June 23, 1932), and 375,418 (June 27, 1932).—In treating sheet material with varnish or other liquid, the liquid is applied while the material is being unwound from one roll and rewound upon the other. No. 375,241 covers the apparatus and 375,418 the process. —A. P.-C.

Safety Paper. Burgess W. Smith assignor to The Todd Co. U. S. pat. 1,906, 824 (May 2, 1933).—Safety paper is prepared containing a substance such as *p, p'*-dihydroxydiphenyl or the like characterized by two carbon rings or groups of carbon rings linked together with the diphenyl linkage or equivalent linkage and having two hydroxyl radicals in the para-position to that linkage. —A. P.-C.

Safety Paper. Viktor Bausch, Sr., Theodor Bausch and Felix Bausch. Brit. pat. 378,694 (Aug. 18, 1932).—The paper is made from a stock having a pH value of 3 to 5 containing a carboxylic acid derivative of benzene or naphthalene, or a derivative or compound thereof, such as di- or tri-hydroxybenzoic acids, etc., and a reagent, such as ferric salts, lead ferrocyanides, etc., which reacts by itself or in the presence of other substances to give color reactions on the addition of an acid medium of pH less than 3.—A. P.-C.

Waterproofing Paper, Etc. Courtaulds, Ltd., and Walter H. Glover. Brit. pat. 375,451 (June 30, 1932).—Sheets of paper or other cellulosic material are treated with a solution containing a cellulose ester (such as nitrocellulose) or ether, petroleum jelly and a natural or artificial gum or resin in organic solvents, such as butyl acetate and alcohol. A plasticizer, such as butyl phthalate, may be added.—A. P.-C.

Waterproofing paper. Papeteries Navarre. Fr. pat. 742,422 (March 7, 1933).—Fatty substances such as paraffin, waxes, etc., are mechanically dispersed in a water-proofing bath containing an alkali caseinate, formaldehyde, and a substance preventing coagulation until drying commences.—A. P.-C.

Rubber-Impregnated Compound Paper and Pasteboard. Victor Antoine. Brit. pat. 375,157 (June 23, 1932).—The compound paper, suitable as a leather substitute, is made by introducing a rubber solution or latex between two or more lengths of paper, uniting them by pressure, causing rubber solution or latex to circulate through the composite fabric, drying and vulcanizing. Impregnation is improved by roughening the paper with rasps or by sprinkling with a solution of aluminum sulphate or colloidal sulphur or carbon.—A. P.-C.

Paper Liners For Closures Such as Those of Containers For Foods. Daniel M. Gray assignor to Hazel-Atlas Glass Co. U. S. pat. 1,903,319 (April 4, 1933).—A disk of paper of sufficient density to reduce to a minimum any permeation by a coating applied to it carries a coating film of an artificial polymerised vinyl resin treated with a plasticizing agent such as polymerized vinyl acetate and chloride together with tricresyl phosphate, etc.—A. P.-C.

Paper Product. William C. Lodge assignor to Manson Chemical Co. U. S. pat. 1,903,787 (April 18, 1933). —A paper material is prepared containing wax and starch deposited from a starch emulsion of the wax, which serves to give desired water-resistance.—A. P.-C.

Filter-Bag Material For Removing Dust From Air. Walter C. Davidson, assignor to The Hoover Co. U. S. pat. 1,901,438 (March 14, 1933).—An air-pervious sheet material such as paper is used, formed of fibers such as long manila hemp fiber, which have a coating of latex (the sheet material being formed so as to have a greater strength longitudinally than transversely of its length). —A. P.-C.

Manufacture of Duplex or Multiplex Paper With Different Appearance On Various Spots. Reinhold M. Wendel, assignor to Aktiebolaget Papyrus. U. S. pat. 1,903,711 (April 11, 1933).—In making paper having transparent portions, a layer of transparent paper stock and a second layer of non-transparent paper stock are formed, one layer is placed on the other and the two layers are felted together to form a composite paper web which is finished.—A. P.-C.

Devices For Decorating Paper. James D. MacLaurin. Brit. pat. 373,215 (May 17, 1932).—Each of a series of spray guns discharges a single thread of color solution on the moving sheet. The color solutions comprise a base of nitrocellulose or other cellulose ester in a solvent with a dye, pigment and (or) filler dissolved or suspended therein, a resin substance, such as batu gum, rubber, rubber latex, etc., being added to give body. Casein up to 40 per cent may be added to give embossed effects.—A. P.-C.

Tracing Paper. Frederick W. J. Allott. Brit. pat. 379,575 (Sept. 1, 1932).—Paper is treated with a mixture of petroleum and resins or gums, such as gum dammar, copal and colophony, to which may be added a trace of vegetable oil, such as poppy seed, castor, resin or walnut oil.—A. P.-C.

Method of Producing Abrasive Paper. Carl Münch.

U. S. pat. 1,918,418 (July 18, 1933).—A mixture of abrasive material and of a solution of cellulose ester in a low-boiling solvent is fed between a pair of adjustable rolls (the distance between which regulates the thickness of coating applied) on to a sheet of paper as the latter passes over a third roll, the three rolls rotating in the same direction. —A. P.-C.

Engraver's Mat. Arthur B. Glenn. U. S. pat. 1,903,813 (April 18, 1933).—A backing sheet of paperboard is coated with shellac and is provided with a facing adhering to the board on the shellacked face and comprising a magnesium silicate composition such as purified talcum powder, glue, carbolic acid and yellow Diamond Dye. —A. P.-C.

Making and Waxing a Sheet of Paper By a Paper Machine. Max Oberdorfer. U. S. pat. 1,915,865 (June 27, 1933).—A sheet of paper is both made and waxed by a paper machine in a single operation by reducing the absorptiveness of the paper web as it comes to the driers and applying a film of wax to the web by means of one or more of the calendar rolls. The wax on the paper is set by cooling one or more of the calendar rolls adjacent to and following the one by means of which the wax was applied.—A. P.-C.

Machine For Making Double-Faced Corrugated Paper. Wilber E. Bowersock and Francis J. Spiess assignors to The Rochester Folding Box Co. U. S. pat. 1,914,071 (June 13, 1933).—Six rolls of paper are arranged in a row with their axes parallel, three of the webs being fed towards one end of the row and the other three towards the other end. The three latter webs are deflected back in the opposite direction over the row of rolls, and all webs are brought together in parallel relation and passed through a heated press in which they are combined into two sheets of double-faced corrugated paperboard.—A. P.-C.

Roofing and Building Material. Henry C. Avery and Lester Kirschbraun, assignors to The Patent and Licensing Corp. U. S. pat. 1,902,298 (March 21, 1933).—A rigid base consisting of a layer of coarse interfelted fibers with a number of relatively large interstitial voids has a weather-resistant coating on one face, and a sheet of asphalt impregnated, asphalt coated and mineral surfaced roofing material secured to the other face by means of a film of weatherproof adhesive.—A. P.-C.

Packing Pad. Robert W. Burrows assignor to William K. Jaquith. U. S. pat. 1,918,246 (July 18, 1933).—The pad comprises superposed layers of flaccid sheets of crimped paper and a facing sheet having a waterproofed surface, and provided with end wings adapted for folding over the ends of the superposed crimped layers and for attachment to the reverse side of the pad from the facing sheet.—A. P.-C.

Corrugated Paper. Otto Goy. Brit. pat. 374,298 (June 9, 1932).—A stiffening agent, such as waterglass, mortar, asphalt, etc., is introduced into the paper and dries or hardens during the corrugating process to retain the corrugations in shape.—A. P.-C.

Cigarette Paper. Albert H. Low. U. S. pat. 1,905,416 (April 25, 1933).—Cigarette paper is impregnated with a soluble silicate having a fixed alkali base, such as sodium silicate, in order to prevent flaking of the paper when burned and lessen fire hazard from discarded cigarettes.—A. P.-C.

Paper and Cardboard From Rubber Latex Pulp. Antonio Ferretti. Brit. pat. 375,845 (June 30, 1932).—Paper or cardboard containing rubber, etc., is made by mordanting the vegetable fibers of the paper with a coagulating agent for the latex such as aluminum sulphate before the latex is introduced and mixed with the paper pulp; or the latex is coagulated on the fibers by means of ammonium chloride, magnesium chloride, magnesium sulphate or the equivalent.—A. P.-C.

Deodorizing Paper. Milton O. Schur assignor to Brown Co. U. S. pat. 1,905,757 (April 25, 1933).—Paper containing viscose is treated with an oxidizing agent such as chlorine to destroy foul odors and odor-generating substances.—A. P.-C.

Paper-Like Material Suitable for Floor Covering or Making Gaskets, Etc. Elmer C. Schacht assignor to Behr-Manning Co. U. S. pat. 1,904,087 (April 18, 1933). —A mixture is prepared of comminuted cork and fibers such as jute, cotton or asbestos, with sufficient water to form a stock; the stock is formed into a web, and a flexible binder is included in the web in sufficient quantity to increase the inherent strength and resilience of the web and Numerous examples with details and modifications are described.—A. P.-C.
render it flexible and resistant to creasing and flexing.

Method and Apparatus for Making Roofing. Lester Kirschbraun assignor to The Patent and Licensing Corp. U. S. pat. 1,912,986 (June 6, 1933).—A series of precut roofing elements are suspended in a vertical position. A waterproof adhesive coating is applied to the lower portion of one face of each element in succession. The successive elements are arranged in overlapping position with the lower portion of each element covering the uncoated upper portion of the succeeding element, and granular surfacing material is applied to the uncovered coated portions.—A. P.-C.

Apparatus and Process for Making Composition Shingles. Ray W. Conant assignor to Harold D. Brown. U. S. pat. 1,913,475 (June 13, 1933).—A strip of base material sufficiently wide to form one or more shingles is passed through a bath of a binding material to form an adhesive coating. A portion of the coating is removed so as to provide the strip with a coated and an uncoated portion. Filler is applied to the adhesive coating. The strip is then passed through a second bath of the adhesive and a second coating of filler is applied.—A. P.-C.

Reproducing Inlay Designs of Cornstalk Fiber, Etc., in Surfaces Such As Panels. Emil C. Loetscher. U. S. pat. 1,902,087 (March 21, 1933).—A base of compressible material is provided with a surface covering of thin fibrous material such as kraft paper impregnated with a resinous substance such as bakelite varnish and strips of fibrous material such as thinner paper which may carry a printed design are laid upon this covering and the materials are compressed to bring the inlay strips flush with the other portions of the surface.—A. P.-C.

Process for the Production of Board. Paul Birch Burchardt. Fr. pat. 740,988.—Two or more sheets or strips of cellulosic material, with an intermediate layer of asphalt, tar or other similar binder between adjacent sheets, are combined by pressing.—A. P.-C.

Reinforced Corrugated Board. Albert Fraisse and Léon Joseph Mistarlet. Fr. pat. 743,824.—Corrugated board is faced on one or both sides with a sheet of paper to which is applied on the outer surface of the faced board a thin sheet of wood veneer.—A. P.-C.

Boxboard. Société Française de l'Ondulium. Fr. pat. 741,809.—The board is lined on one or both sides with a light sheet of creped kraft paper to reinforce it and prevent cracking when folded.—A. P.-C.

Paper Board. Charles L. Keller assignor to The Richardson Co. U. S. pat. 1,897,198 (Feb. 14, 1933).—Poorly bending boxboard is protected from cracking at

the score lines by coating it (at least where the score lines occur) with a tenacious layer of a flexible substance such as a suitable cellulose lacquer.—A. P.-C.

Paper Board. Paul H. Rogers. U. S. pat. 1,901,378 (March 14, 1933).—A corrugated paper board which is suitable for use as boxboard is formed of semi-chemical pulp in admixture with cotton fibers.—A. P.-C.

Wallboard Containing Zinc Metarsenite. Leo P. Curtin assignor to Curtin-Howe Corp. U. S. pat. 1,900,-162 (March 7, 1933).—Zinc metarsenite is precipitated in the presence of plant fiber material such as that for wallboard manufacture, and the fiber is then shaped and dried, the zinc metarsenite serves as a preservative.—A. P.-C.

Sawdust Wood Fiber Board. James V. Nevin assignor to The Pacific Lumber Co. U. S. pat. 1,899,768 (Feb. 28, 1933).—A nailable, sawable and flexible "synthetic lumber" is formed of 80 to 90 per cent of coarsely fibrous wood such as sawdust and 10 to 20 per cent of a hardened synthetic resin.—A. P.-C.

Fireproof and Waterproof Paper and Pulp Board. The Agasote Millboard Co. Brit. pat. 370,391 (Dec. 30, 1930).—Fire-resistant, waterproof and heat-insulating pulp board is made by mixing aluminum hydroxide and a colloidal clay such as bentonite with a suspension of pulp, shaping the mixture into a board and drying. Insoluble crystals, *e.g.*, calcium or barium sulphate, may be added. The aluminum hydroxide and calcium sulphate are preferably prepared by double decomposition of aluminum sulphate and calcium hydroxide. A compound paper is made by uniting with sodium silicate thin layers of the board made, *e.g.*, on a paper machine.—A. P.-C.

Carbon Paper. Unichem Chemikalien Handelsgesellschaft A.G. Fr. pat. 744,832.—High molecular weight aliphatic alcohols, such as cetyl alcohols, are used as vehicle for applying the color to the base paper.—A. P.-C.

Waxed Paper and Process of Making the Same. George N. Lovatt. U. S. pat. 1,900,294 (March 7, 1933). —Food wrappers are prepared by first embossing the paper with a design and then providing the embossed paper with a coating of wax.—A. P.-C.

Padding Material. Frank L. Bryant assignor to Cellufoam Corp. U. S. pat. 1,909,521 (May 16, 1933).—The patent provides a pad in the form of a layer of material having a cushion-like body composed of relatively long hair-like resislient fibers intermeshed with relatively short distended cellulose fibers, and having its surface fibers intermeshed with the interior fibers and compacted to provide a relatively thin, tough, paper-like skin.—A. P.-C.

Method of Making Prepared Building Products. Thomas Robinson assignor to Lancaster Asphalt, Inc. U. S. pat. 1,909,318 (May 16, 1933).—A coating of a sealing material is applied directly to one face only of a web of unimpregnated roofing felt. The web and coating are cooled to a preselected temperature adapted to give the coating an initial set. A coating of regulated thickness of mastic (including particles of solid material and a plastic compound in relatively fluent condition) is applied to the other face of the web, and the treated web is pressed to bring about substantial impregnation by the plastic material and the coating.—A. P.-C.

Building Material. The Paraffine Companies, Inc. Brit. pat. 367,843 (Sept. 23, 1930).—A flexible compound sheet material for use as a wall or floor covering comprises a layer of felt, saturated with bituminous material such as pertroleum asphalt, tar or pitch, and provided on both sides with a layer of asphalt, a layer of paper, such as kraft, being secured to one of the asphalt layers. —A. P.-C.

Treating Fibrous Materials with Phenol-Formaldehyde Condensation Products. Baron H. F. Richards and Arthur H. Horoldson assignors to the Continental Diamond Fibre Co. U. S. pat. 1,897,651 (Feb. 14, 1933).—Creped or crimped fibrous material such as paper is passed through a bath of phenol-formaldehyde condensation product, and the impregnated material is subjected to heat and pressure to form a product which is suitable for electric insulation.—A. P.-C.

Paper Suitable for Use with Food Products. Carleton Ellis. U. S. pat. 1,897,694 (Feb. 14, 1933).—Fibrous paper pulp is treated to effect some formation of hydrocellulose and is incorporated with a wax disperson containing a wax such as paraffin and a light-colored petroleum oil and the treated pulp mixture is then formed into sheets and calendered. Use of various other auxiliary ingredients is described.—A. P.-C.

Water-Resisting Treated Paper. Carleton Ellis assignor to Ellis-Foster Co. U. S. pat. 1,899,086 (Feb. 28, 1933).—An unctuous petroleum hydrocarbon mixture such as petroleum wax and oil mixture is disseminated in the paper.—A. P.-C.

Fireproofing Paper. I. G. Farbenindustrie A.-G. Brit. pats. 365,012, (July 10, 1930) and 370,511 (Jan. 15, 1930).—*No. 365,012*—A fire proofing agent for paper comprises an ammonium halide, a salt of an aromatic sulphonic acid benzylated in the nucleus, *e. g.*, sodium benzylnaphthalenesuphonate, and boric or phosphorous acid or a soluble borate or phosphite, such as borax or ammonium borate. Magnesium or calcium chlordies and fungicides, such as sodium cresolate, sodium fluoride, salicylic acid, etc., may be included. *No. 370,511*—Paper coverings on wires are rendered non-inflammable by treatment with dichlorinated naphthalenes, *i. e.*, having an average content of two chlorine atoms to 1 molecule of naphthalene, subsequent to the usual impregnation with fireproofing solutions such as aqueous solution of diammonium hydrogen phosphate, ammonium bromide and sodium sulphate. —A. P.-C.

Safety Paper. Frank S. Wood. U. S. pat. 1,900,967 (March 14, 1933).—Paper in an alkaline condition is treated with a ferrocyanide such as that of potassium to produce an ink set condition without change of the normal color of the paper.—A. P.-C.

Proofing Paper. Arthur Graham-Enock and Graham-Enock Manufacturing Co., Ltd. Brit. pat. 362,007 (Sept. 8, 1930).—Disk closures for bottles, etc., are cut from material treated with cellulose acetate, *e. g.*, by steeping in an acetone solution of the acetate or by placing between sheets of the acetate and subjecting to heat and pressure. Casein may be added to the solution together with a pasticizer such as castor oil.—A. P.-C.

Coating Webs. "Universelle" Cigarettenmaschinen-Fabrik J. C. Müller and Co. Brit. pat. 365,900 (Feb. 27, 1931).—In making wrappers with a transparent portion, a web of paper is fed between a pressure roll and a roll of which a portion is arranged to dip in a paraffin bath. The web is then severed into blanks.—A. P.-C.

Insulating Material for Use in Oil-Filled Electrical Apparatus. Harry D. Segar assignor to The British Thomson-Houston Co., Ltd. Brit. pat. 370,323 (Sept 8, 1930).—Layers of paper are cemented together with shellac mixed with an alkyd resin prepared in presence of an unsaturated monobasic aliphatic acid or glyceride thereof, *e. g.*, linseed or China wood oil, the fatty acids derived from either or oleic acid. Rosin and castor oil may be added to the resin ingredients.—A. P.-C.

Laminated Sheet Material Suitable for Electrical Insulation. Harry D. Segar assignor to General Electric

Co. U. S. pat. 1,899,591 (Feb. 28, 1933).—Sheets of kraft paper are cemented together with a composition comprising shellac and an alkyd resin containing a relatively large proportion of unsaturated monobasic aliphatic acid such as linseed oil fatty acids in chemical combination, the product being oil-tight parallel to its laminations. —A. P.-C.

Matrix Board for Stereotyping. Anton R. Pawlitschko assignor to Western Newspaper Union. U. S. pat. 1,900,660 (March 7, 1933).—The surface of matrix paper is impregnated with a suspension in water of graphite and a resinous material which is hard at normal tempartures. —A. P.-C.

Fire Resistant and Preservative Composition Suitable for Treating Paper. Joseph R. Watson assignor to Virginia L. Watson. U. S. pats. 1,900,211 and 1,900,212 (March 7, 1933).—*No. 1,900,211*—Cryolite or an alkali metal fluosilicate and an alkali metal silicate are used with an oil vehicle such as an oil or bituminous material. *No. 1,900,212* relates to a composition such as may be formed from a soluble silicate, water, a soluble sulphate such as an alum, and cryolite or alkali metal fluosilicate.—A. P.-C.

Artificial Leather. George A. Richter, Wallace B. van Arsdel and Roger B. Hill assignors to Brown Co. U. S. pat. 1,900,951 (March 14, 1933).—Sheet material is treated with rubber latex, dried, treated with a caustic soda solution to remove resins and proteins associated with the latex, worked, as by squeezing or kneading while wet with the solution, and is then washed and dried. —A. P.-C.

Method for Making Composite Waterproof Sheet Material. William N. Stevenson assignor to American Reenforced Paper Co. U. S. pat. 1,906,654 (May 2, 1933).—Composite waterproof sheet material, having an outer layer of textile fabric and a backing sheet of paper secured to one face of the fabric by a heated waterproof adhesive, is produced by chilling the contacting surfaces of the fabric and the heated adhesive to congeal the latter and prevent its penetration to the outer surface of the fabric, and then securing the paper to the fabric by means of the adhesive.—A. P.-C.

Fibrous Composition Suitable for Molding. Earl P. Stevenson assignor to The Richardson Co. U. S. pat. 1,901,382 (March 14, 1933).—A fibrous pulp in aqueous suspension is associated with a binder substance such as a synthetic resin in particle form and having filter materials such as slate dust, etc., substantially homogeneously distributed in it.—A. P.-C.

Manufacture of Fiber Sheets and Apparatus Therefor. Daniel M. Sutherland, Jr. U. S. pat. 1,920,481 (Aug. 1, 1933).—In a mold for forming and pressing pulp sheets, the pulp is fed in at opposite edges, and the air is vented at the center of the mold.—A. P.-C.

Process and Apparatus for the Production of Non-Warping Fiber Board. William H. Mason assignor to Masonite Corp. U. S. pats. 1,923,105 and 1,923,106 (Aug. 22, 1933).—Sheets are formed of wet fibers containing a large percentage of lignin (*e. g.*, fibers produced by the Mason "explosion" process) and subjected to heat and pressure to consolidate the material into dense, dry, hard board. The boards are arranged in parallel planes separated by narrow spaces to form passages through which moist air is passed until the boards absorb sufficient moisture substantially to prevent warping. *No. 1,923,105* covers the process and *No. 1,923,106* the apparatus.

Gummed Tape and Method of Making the Same. William W. McLaurin. U. S. pat. 1,923,837 (Aug. 22, 1933).—Reinforcing and sealing tape is formed by adhesively securing a series of threads to a web of paper with the threads running approximately parallel to the edges of the paper, making a tube of the paper, and slitting the tube diagonally to the threads.—A. P.-C.

Insulating Wall Board. Carroll E. Carpenter assignor to U. S. Gypsum Co. U. S. pat. 1,920,496 (Aug. 1, 1933).—A fiber board of substantial thickness, high insulating value and cellular structure is made from a mixture of relatively short hardwood fibers of oak, gum, tupelo, hackberry, magnolia, elm, maple, birch or beech, and relatively long softwood fibers of cypress, cottonwood or willow.—A. P.-C.

Composite Web and Method of Making Same. Henry A. Chase and Harold R. Titus assignors to Brown Co. U. S. pat. 1,921,504 (Aug. 8, 1933).—An absorbent reinforced pulp web is formed by applying a fabric such as cheesecloth to a wire passing around a cylinder mold in a stock vat, so that the cheesecloth is embedded in the sheet, and the latter is dried without the use of pressure. —A. P.-C.

Machinery

Apparatus for Making Multi-Ply Board. James C. Nichols. U. S. pat. 1,915,690 (June 27, 1933).—The apparatus provides means for drawing paper from two supply rolls, applying glue to one side of each sheet, bringing them into contact with opposite faces of a series of cores, panels or slabs of relatively thin wood, passing through one or more presses, cutting the sheet transversely, and then passing through a series of presses, the lower rolls of which are all driven at the same angular speed but are of progressively increasing diameter.—A. P.-C.

Disk Valve Water Lock for Board Machines. Henri P. L. Laussucq assignor to Birdsboro Steel Foundry and Machine Co. U. S. pat. 1,907,206 (May 2, 1933).—In hydraulic presses used for forming and pressing board sheets a valve is provided for preventing premature escape of water from the die in which the sheet is formed. Means are provided for automatically opening the valve only when all the air and excess of stock have been removed from the die.—A. P.-C.

Save-All. Carl B. Thorne. U. S. pat. 1,918,621 (July 18, 1933).—The object of the invention is to provide a save-all that will recover only the long fibers from the white water and will allow the fine fibers, "flour" and other small particles to pass through. This is accomplished by agitation of the white water at the points where normally the fibers would build up a mat on the screening surface. Examples are shown of an inward-flow of an outward-flow drum save-all and of a flat-wire save-all constructed to effect this object.—A. P.-C.

Pulp Screen. James R. Dunbar assignor to Thomas L. Dunbar. U. S. pat. 1,908,828 (May 16, 1933).—A rock shaft is placed under and longitudinally of the diaphragms. Arms projecting from opposite sides of the rock shafts are flexibly connected to the push rods which transmit the vibrations to the diaphragms.—A. P.-C.

Ejecting and Delivery Device for Paper Winders. James A. Cameron assignor to Cameron Machine Co. U. S. pat. 1,918,016 (July 11, 1933).—The invention covers various mechanical features of construction designed to facilitate the handling of heavy paper rolls safely and expeditiously without injuring or marring the paper. —A. P.-C.

Tests of Regular and Stabilized 18-8 Alloy Welds in Sulphite Liquor. J. D. Miller et al. Paper Trade J. 97, No. 9: 29-34 (Aug. 31, 1933).—Regular low-carbon and titanium-stabilized low-carbon 18-8 alloys can be used in the as-welded condition without suffering intergranular corrosion by sulphite liquor; high-carbon 18-8 alloys should always be heat-treated after welding and before being used in sulphite service.—A. P.-C.

IMPORTS OF PAPER AND PAPER STOCK

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING MARCH 24, 1934

CIGARETTE PAPER

De Manduit Paper Corp., Pr. Harding, Havre, 203 cs.; Champagne Paper Corp., Ile de France, Havre, 1,139 cs.

WALL PAPER

F. J. Emmerich, Deutschland, Hamburg, 6 bls.; R. F. Downing & Co., American Trader, London, 1 cs.; ——, Manhattan, Havre, 6 cs.

NEWSPRINT

Star Co., Markland, Liverpool, N. S., 1,536 rolls; N. Y. Tribune, by same, 1,432 rolls; World-Telegram, by same, 685 rolls; B. J. Warren, by same, 44 rolls; Perkins Goodwin & Co., Deutschland, Hamburg, 485 rolls; Brooklyn Times, Carlsholm, Norrkoeping, 815 rolls; Jay Madden Corp., Schwaben, Bremen, 432 rolls.

PRINTING PAPER

Senefelder, Inc., Deutschland, Hamburg, 14 cs.; Japan Paper Co., Pr. Harding, Hamburg, 5 cs.; International F'd'g Co., E. Francqui, Antwerp, 4 cs.; E. Dietzgen & Co., Black Heron, Rotterdam, 3 cs.; Fuchs & Lang Manfg. Co., Manhattan, Hamburg, 6 cs.

PACKING PAPER

F. C. Strype, Deutschland, Hamburg, 61 cs.; Bank of Manhattan Co., Schwaben, Bremen, 16 cs.

WRAPPING PAPER

F. C. Strype, Pennland, Antwerp, 5 cs.; Standard Products Corp., by same, 37 rolls, 10 cs.; Yardley & Co., American Trader, London, 3 cs.; Walker Goulard Plehn Co., Schwaben, Bremen, 130 rolls; Rohner Gehrig & Co., by same, 6 bls.; Scharf Bros., Black Heron, Rotterdam, 2 cs.

FILTER PAPER

H. Reeve Angel & Co., Inc., Berengaria, Southampton, 7 cs.; A. Giese & Son, by same, 85 bls.

FILTER PULP

A. Giese & Son, Deutschland, Hamburg, 10 bls.

FILTER COMPOUND

H. Reifenberg, Deutschland, Hamburg, 90 cs., 20 bls.

METAL COATED PAPER

K. Pauli Co., Deutschland, Hamburg, 36 cs.

SURFACE COATED PAPER

Gevaert Co. of America, Pennland, Antwerp, 74 cs.

PHOTO PAPER

American Express Co., Deutschland, Hamburg, 14 cs.

DECALCOMANIAS

Sellers Transportation Co., Deutschland, Hamburg, 8 cs.

CARD BOARD

American Express Co., Pr. Harding, Hamburg, 50 cs.; Framerican Importing Co., Exochorda, Marseilles, 5 cs.

PASTE BOARD

Roger & Gallet, Ile de France, Havre, 7 cs.

MISCELLANEOUS PAPER

G. Schleicher & Schull Co., Inc., Deutschland, Hamburg, 2 bls., 16 cs.; Hormann Schutte Co., Exochorda, Genoa, 5 cs.; Keller Dorian Paper Co., Exochorda, Marseilles, 2 cs.; Keller Dorian Paper Co., Sinaia, Marseilles, 5 cs.; Globe Shipping Co., Schwaben, Bremen, 31 cs.; Standard Products Corp., Ile de France, Havre, 23 cs.; Keuffel & Esser Co., Manhattan, Hamburg, 20 cs.

RAGS, BAGGINGS, ETC.

Banco Coml. Italiane Trust Co., Deutschland, Hamburg, 88 bls. rags; Banco Coml. Italiane Trust Co., by same, 132 bls. bagging; ——, Caledonia, Glasgow, 41 bls. paper stock; P. Berlowitz, Exochorda, Alexandria, 200 bls. rags; ——, by same, 158 bls. rags; E. J. Keller C., Inc., Exochorda, ——, 51 bls. rags; ——, Cold Harbor, Leith, 248 bls. bagging; Chase National Bank, Cold Harbor, Dundee, 317 bls. paper stock; M. Snedeker Corp., Cold Harbor, Belfast, 156 bls. paper stock; Chase National Bank, Schwaben, Bremen, 32 bls. rags; New England Waste Co., by same, 250 bls. cotton waste; ——, Black Heron, Rotterdam, 30 bls. cotton waste; E. J. Keller Co., Inc., Black Heron, ——, 65 bls. bagging; E. J. Keller Co., Inc., San Pedro, ——, 149 bls. rags; National City Bank, Manhattan, Hamburg, 155 lbs. rags; Banco Coml. Italiane Trust Co., Cristobal Colon, Coruna, 50 bls. bagging.

HIDE GLUE

——, Deutschland, Hamburg, 60 bags.

OLD ROPE

Banco Coml. Italiane Trust Co., Manhattan, Hamburg, 48 coils.

CASEIN

D. C. Andrews & Co., Deutschland, Hamburg, 60 bags.

WOOD PULP

Bank of N. Y. Trust Co., Deutschland, Hamburg, 360 bls. wood pulp, 72 tons; Castle & Overton, Inc., by same, 1,740 bls. wood pulp, 348 tons; Stora Kopparberg Corp., Carlsholm, Stockholm, 275 bls. wood pulp; Lagerloef Trading Co., Carlsholm, Helsingfors, 2,978 bls. sulphite.

PORTLAND IMPORTS

WEEK ENDING MARCH 24, 1934

Bulkley Dunton & Co., Sagoporack, ——, 250 bls. wood pulp; Gottesman & Co., Inc., Sagoporack, Sweden, 5,000 bls. wood pulp.

BOSTON IMPORTS

WEEK ENDING MARCH 24, 1934

Parsons & Whittemore, Inc., Cold Harbor, ——, 250 bls. sulphite; E. J. Keller Co., Inc., Cold Harbor, ——, 327 bls. wood pulp.

BALTIMORE IMPORTS

WEEK ENDING MARCH 24, 1934

——, Cold Harbor, London, 120 coils, old rope; Congoleum Nairn Co., Black Hawk, Antwerp, 46 bls. rags; Parsons & Whittemore, Inc., City of Norfolk, ——, 3,175 bls. sulphite; Parsons & Whittemore, Inc., City of Havre, ——, 500 bls. sulphite; Gottesman & Co., Inc.,

Blankaholm, Sweden, 3,300 bls. wood pulp; Bulkley Dunton & Co., Blankaholm, ———, 2,250 bls. wood pulp; Bulkley Dunton & Co., City of Norfolk, ———, 1,100 bls. wood pulp.

NEWPORT NEWS IMPORTS

WEEK ENDING MARCH 24, 1934

Bulkley Dunton & Co., Blankholm, ———, 2,500 bls. wood pulp.

New "Fulscope" Recording Regulators

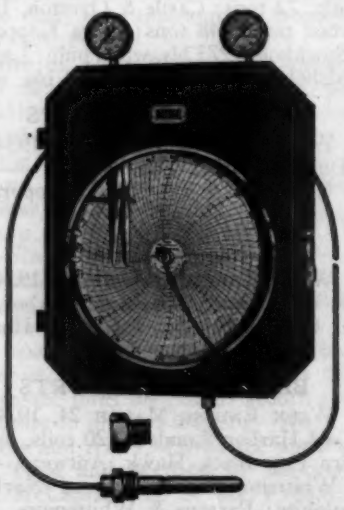
One of the major difficulties encountered in solving control problems always has been the inability to secure and maintain either throttling or on-and-off control when desired. The difficulty has been due to the limited number of fixed "sensitivity" adjustments for balancing regulator performance against the time lag in the apparatus under control.

The Universal Sensitivity Adjuster incorporated in all Taylor "Fulscope" Regulators solves the problem in a fundamental manner by providing a full-range sliding adjustment of which the regulator performance can be perfectly balanced for any degree of apparatus time lag. A simple screwdriver adjustment on a graduated dial gives throttling or on-and-off diaphragm valve action, whichever provides the desired type of control. The adjustment does not require a skilled operator, removal of chart, or interruption of service.

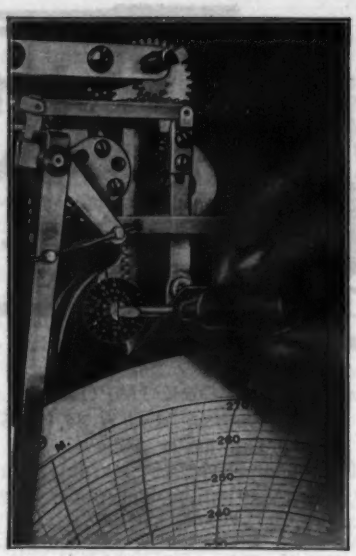
Another feature of equal importance to many instrument users is found in the fact that the regulator mechanism and means of adjustment of all Taylor "Fulscope" Regulators are the same whether for controlling Temperature, Pressure, Rate of Flow, or Liquid Level. They differ only in their means of actuation. This insures uniformity of instrument operation and processing results on either continuous or batch processes, quick and thorough training of operators, and interchangeability of parts.

A higher degree of accuracy than hitherto possible is produced by a new lightweight duralumin mechanism, practically frictionless bearings, and many other simplifications and refinements of design.

Regulator action can be converted easily and quickly from *direct* to *reverse*, or vice versa, without addition or substraction of parts. This permits any combination of regulator and diaphragm valve action best suited to processing requirements.



TAYLOR "FULSCOPE" RECORDING TEMPERATURE REGULATOR



UNIVERSAL SENSITIVITY ADJUSTER FOR BALANCING INSTRUMENT PERFORMANCE WITH APPARATUS TIME LAG

Temperature or pressure regulators are readily adaptable to applications requiring a different temperature or pressure range by simply substituting a tube system and chart with the required range. It is equally easy for the operator to convert a temperature instrument into a pressure instrument, or vice versa.

Control is maintained in the conventional manner by regulating the flow of air pressure to the diaphragm valve in the controlling medium line in response to changes in apparatus under control. A constant 25-lb. air pressure supply for actuating the diaphragm valve is recommended. However, should the pressure occasionally rise above or fall below the recommended figure, a novel and dependable compensating device maintains the desired control until normal pressure is restored.

The design of the die-cast aluminum case is the product of an eminent industrial designer. It is supplied in two styles; for face-mounting, or for flush-mounting on panel boards. Standard finish is instrument black; white finish can be supplied.

A Warren Telechron electric chart-driving mechanism is standard equipment; a spring-driven mechanism is optional.

No alterations are required to the mechanism of these instruments to operate in conjunction with the Taylor "Dubl-Response" Control Unit which may be required if precision control is imperative despite extremely difficult operating conditions.

A descriptive bulletin covering these new Taylor "Fulscope" Recording Regulators can be obtained by writing to Taylor Instrument Companies, Rochester, N. Y.

A New Calender Feed

A new calender feed which prevents, to a great extent, the losses due to cutting uneven edges of paper, has been recently developed by the Smith & Winchester Manufacturing Company of South Windham, Conn. An attachment to go on a regular board calender, it smooths the paper out as it goes between the rolls.

In the mills which have already installed this calender feed, the loss due to cutting has dropped from 25 per cent to 1 or 2 per cent and, in some cases, even less than 1 per cent. The attachment sells for about $350.00, the price varying according to the width of the calender.

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, March 28, 1934.

Trading in the local paper market during the past week was moderately active. Supplies of the various standard grades of paper are moving into consumption in fairly good volume for the season. Sales forces of the leading paper organizations continue optimistic. Prices generally remain unchanged.

The newsprint paper market is more buoyant. Both advertising volume and consumption are ahead of the corresponding period of the preceding year. Production in the United States, Canada and Newfoundland is well maintained. Stocks at Canadian and United States mills totalled 62,505 tons at the end of February.

Conditions in the fine paper market are improving. Fine writing papers are moving freely. The coarse paper market is displaying strength. Tissues are going forward with regularity. The paper board market is holding up well. Demand for box board is persistent. Prices are maintained at formerly quoted levels.

Mechanical Pulp

The ground wood pulp market is marking time. Manufacturing operations in North America and abroad are proceeding in sufficient volume to meet current requirements. The contract movement is well up to average. Prices on all imported and domestic grades are steady and reports of concessions are infrequent.

Chemical Pulp

Steadiness prevails in the chemical pulp market. The bright particular feature of the week is the continued activity of foreign and domestic kraft pulp. Quotations on imported No. 1 kraft pulp are higher and are running at from $1.85 to $1.90, on dock, Atlantic ports. Other grades are holding to schedule, without difficulty.

Old Rope and Bagging

The position of the old rope market is practically unchanged. Demand for both domestic and foreign old manila rope is still restricted. Small mixed rope is quiet. Old rope prices are fairly steady. The bagging market is irregular. While gunny bagging is firmer, scrap bagging is dull. Roofing bagging is slightly easier.

Rags

Paper mill demand for domestic rags is fairly persistent. New cotton rags are attracting some attention. Offerings of No. 1 white shirt cuttings are limited and quotations are firm. Roofing grades are softer. The imported rag market is showing signs of betterment, although still affected by the foreign exchange situation.

Waste Paper

No radical changes were reported in the paper stock market during the past week. Board mill demand for the lower grades is mainly routine. The higher grades of waste paper are in seasonal request. Hard and soft white shavings and hard white envelope cuttings are firm. Book stock is in better demand, with quotations steady and unchanged.

Twine

Most of the business transacted in the local twine market during the past week was along routine lines. Supplies have been moving in satisfactory volume, influenced by the approach of Easter, and other causes. The outlook for the future is considered promising, in most quarters. Prices are well maintained.

Hearing for Waxed Paper Industry

WASHINGTON, D. C., March 28, 1934—William Eisner, Chairman of the Code Authority for the Waxed Paper Industry, on March 22 presented a list of proposed fair trade practices for the industry, as provided for in the code approved December 18, 1933, to J. C. Sappington, aide to Deputy Administrator W. W. Pickard, in a public hearing in Room 2062 of the Commerce Building.

Beside the printed list which includes standard clauses which ban trade mark imitation, defamation of competitors and their goods, suit threats, price discrimination and enticement of employees, Mr. Eisner also submitted additional clauses which would prohibit, as code violations, false labor or other compliance reports, the failure to make extra charges as fixed by the code and the intimidation of customers.

John Donovan, Labor Advisor, said that his board had consistently opposed any inclusion of a clause which would in any way prevent an employee from bettering himself by shifting his employment. Mr. Eisner pointed out that the industry had had numerous regulations laid down for it and that he believed it only fair to prevent one employer from enticing another man's trained employees away from him. Rowland S. H. Dyer, Legal Advisor, suggested a compromise clause but Mr. Donovan insisted that the Labor Board would strenuously oppose the inclusion of any clause of that type.

Karl Hauck, of the Consumer's Advisory Board, pointed out that in providing for price schedules, the industry had bound themselves too tightly by not permitting themselves to make price adjustments for a large order which required minor design changes for part thereof. Mr. Eisner told Mr. Sappington that the omission would be rectified.

To Install Digesters for Indian Pulp Co.

WATERTOWN, N. Y., March 19, 1934—A group of expert mechanics employed by the Stebbins Engineering and Manufacturing Company here have sailed for India where they will install digester linings for the Indian Pulp Company, at Naihati. T. J. Churchill and J. M. Cyener, who have been officially connected with the company for several years, will supervise the installation. They expect to reach their destination early next month and the trip will be a lengthy one as they will travel several thousand miles.

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, March 28, 1934.

BLANC FIXE.—Conditions in the blanc fixe market are practically unchanged. Prices are holding to schedule. The pulp is selling at from $42.50 to $45 per ton, in bulk; while the powder is offered at from 3½ to 3¾ cents per pound, in barrels, at works.

BLEACHING POWDER.—The position of the bleaching powder market is well maintained. Shipments against contract are moving regularly. Prices are steady and unchanged. Bleaching powder is quoted at from $1.90 to $2.15 per 100 pounds, in drums, at works.

CASEIN.—The casein market is firmer. Domestic standard ground is quoted at 12½ cents and finely ground at 13½ cents per pound. Argentine standard ground is selling at 14¾ cents and finely ground at 15 cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Demand for caustic soda is persistent. The contract movement is well sustained. Prices are firm. Solid caustic soda is quoted at from $2.60 to $3.10; while the flake and ground are selling at from $3 to $3.05 per 100 pounds, in large drums, at works.

CHINA CLAY—The china clay market is fairly active. Contract shipments are well up to average. Imported china clay is still quoted at from $13.50 to $21 per ton, ship side; while domestic paper making clay is selling at from $5 to $12 per ton, at works.

CHLORINE.—Trading in the chlorine market is brisk. Supplies are moving into consumption in good volume. Prices are holding up well. Chlorine is quoted at from $2 to $2.25 per 100 pounds, in tanks, or multi-unit cars, in ton lots, or over, at works.

ROSIN.—The rosin market is slightly easier. The grades of gum rosin used in the paper mills are now quoted at from $6.10 to $6.40 per 280 pounds, in barrels, at works; while wood rosin is selling at $5.10 per 280 pounds, in barrels, at southern shipping points.

SALT CAKE.—Paper mill demand for salt cake is seasonal. Prices are firm. Salt cake is still quoted at from $12 to $14; and chrome salt cake at from $12 to $12.50 per ton, at works; while imported salt cake is selling at from $12 to $12.50 per ton, on dock.

SODA ASH.—The soda ash market continues to display strength. Contract shipments are going forward at a steady pace. Quotations on soda ash, in car lots, at works, per 100 pounds, are still as follows: in bulk, $1.10; in bags, $1.40; and in barrels, $1.50.

STARCH.—Business in the starch market is rather quiet. The contract movement is normal. Prices are holding to schedule. Special paper making starch is quoted at $2.67 per 100 pounds, in bags; and at $2.95 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA.—Steadiness prevails in the sulphate of alumina market. The contract movement is fairly heavy. Commercial grades are still quoted at from $1.35 to $1.50; while iron free is selling at from $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—The sulphur market continues steady. Sulphur is quoted at $18 per long ton, on orders of 1,000 tons, or over, on yearly contracts; and at $20 per ton on any smaller quantity over that period. On spot and near by car loads, the quotation is $21 per ton.

TALC.—The position of the talc market is practically unchanged. Prices are holding to previously quoted levels. Domestic talc is quoted at from $16 to $18 per ton, in bulk, at eastern mines; while imported talc is selling at from $23 to $30 per ton, on dock.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	6.50	@	—
Bonds	6.00	@	—
Ledger	6.00	@	—
Writings—			
Extra Superfine	6.50	@	—
Superfine	6.25	@	—
Tub sized	5.75	@	—
Engine sized	5.50	@	—
Book, Cased—			
S. & S. C.	5.35	@	5.75
S. & S. C. Litho.	5.60	@	6.00
M. F.	5.10	@	5.50
Coated and Enamel	5.90	@	6.55
Coated Litho	5.90	@	6.55
Tissues—Per Ream—			
White No. 1	.60	@	.80
White No. 2	.55	@	.70
Anti-Tarnish M. G. only	.75	@	.80
Colored	.80	@	1.00
Kraft	.75	@	.80
Manila	.65	@	.70
Manila—			
No. 1 Jute	9.00	@	9.25
No. 2 Jute	7.75	@	8.50
No. 1 Wood	4.00	@	5.25
No. 2 Wood	3.50	@	4.00
Butchers	3.37½	@	—
Fibre Papers—			
No. 1 Fibre	4.25	@	5.50
No. 2 Fibre	4.00	@	4.75
Common Bogus	1.50	@	3.00
Screenings	2.00	@	3.00
Card Middles	4.00	@	5.00
Glassine—			
Bleached, basis 25 lbs., No. 1	.11	@	—
No. 2	.10	@	—
Bleached, basis 20 lbs.	.13	@	—

(Delivered New York)

News, per ton—			
Roll, contract	40.00	@	—
Rolls, spot	40.00	@	—
Sheets	45.00	@	—
Side Runs	25.00	@	—
Kraft—			
No. 1 Domestic	4.75	@	5.00
No. 2 Domestic	3.87½	@	—
Southern	3.87½	@	—
Boards—per ton—			
News	45.00	@	50.00
Chip	42.50	@	47.50
Sgl. Mla. Ll. Chip	52.50	@	55.00
Jute Lined Chip	52.50	@	55.00
White Patent Coated	65.00	@	70.00
Binders Boards	68.00	@	72.00

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—			
Moist	27.00	@	29.00
Dry	27.00	@	30.00

(F.o.b. Mill)

No. 1 Domestic and Canadian	24.00	@	29.00

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—			
Division 1	2.85	@	—*
Division 2	2.80	@	—*
Division 3	2.75	@	—*
Prime Qualities—			
Class 1. All Prime Easy Bleaching	2.25	@	—*
Other Than Easy Bleaching—			
Class 2. Higher Than Standard	2.20	@	—*
Class 3. Standard	2.15	@	—*
Class 4. Lower than Standard	2.10	@	—

(On Dock, Atlantic Ports)

Kraft No. 1	1.85	@	1.90
Kraft No. 2	1.60	@	1.70

(F.o.b. Pulp Mill)

Kraft Domestic (Delivered)	1.60	@	2.75
Soda Bleached	2.50	@	—

* Add 5 Cents for Albany and 15 Cents for Lake Ports.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	6.50	@	7.00
Silesias No. 1	4.25	@	4.50
New Unbleached	6.75	@	7.25
New Soft Blacks	3.00	@	3.25
Blue Overall	4.00	@	4.25
Fancy	2.50	@	2.75
Washables	1 75	@	2.00
Mixed Khaki Cuttings	3.00	@	3.25
O. D. Khaki Cuttings	3.75	@	4.00
Men's Corduroy	1.50	@	1.75
New Mixed Blacks	2.50	@	2.75

Old Rags

White, No. 1—			
Repacked	3.00	@	3.10
Miscellaneous	2.75	@	3.31
White, No. 2—			
Repacked	1.75	@	2.25
Miscellaneous	1.50	@	1.75
Thirds and Blues—			
Repacked	1.50	@	1.75
Miscellaneous	1.25	@	1.50
Black Stockings	2.50	@	3.00
Roofing Rags—			
No. 1	1.15	@	1.30
No. 2	.85	@	.90
No. 3	.75	@	.80
No. 4	.70	@	.75
No. 5A	.65	@	.70

Foreign Rags

New Rags

New Dark Cuttings	1.60	@	1.70
New Mixed Cuttings	1.75	@	1.85
New Light Silesias	3.75	@	4.00
Light Flannelettes	3.75	@	4.00
Unbleached Cuttings	6.50	@	6.75
New White Cuttings	6.50	@	6.75
New Light Oxfords	3.25	@	3.50
New Light Prints	2.75	@	3.00

Old Rags

No. 1 White Linens	7.50	@	8.00
No. 2 White Linens	6.50	@	7.00
No. 3 White Linens	4.50	@	5.00
No. 4 White Linens	2.25	@	2.50
No. 1 White Cotton	4.25	@	4.75
No. 2 White Cotton	3.25	@	3.75
No. 3 White Cotton	2.50	@	2.75
No. 4 White Cotton	1.90	@	2.15
Extra Light Prints	2.00	@	2.25
Ord. Light Prints	1.75	@	1.85
Med. Light Prints	1.55	@	1.65
Dutch Blue Cottons	1.75	@	1.85
French Blue Linens	2.30	@	2.40
German Blue Linens	2.15	@	2.25
German Blue Cottons	1.70	@	1.80
Checks and Blues	1.30	@	1.40
Linsey Garments	1.50	@	1.75
Dark Cottons	1.15	@	1.30
Old Shopperies	1.00	@	1.10
New Shopperies	.90	@	1.00
French Blues	1.70	@	1.80

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—			
Foreign	1.50	@	1.60
Domestic	1.40	@	1.50
Wool Tares, light	1.20	@	1.30
Wool Tares, heavy	1.25	@	1.35
Bright Bagging	1.20	@	1.30
Manila Rope—			
Foreign	2.40	@	2.50
Domestic	2.50	@	2.75
Small Mixed Rope	1.10	@	1.35
New Burlap Cut	2.00	@	2.25
Hessian Jute Threads—			
Foreign	2.60	@	2.75
Domestic	2.80	@	3.00

Old Waste Papers

(F. o. b. New York)

Shavings—			
White Envelope Cuttings	2.65	@	2.75
Ordinary Hard White No. 1	2.35	@	2.45
Hard White No. 2	2.10	@	2.20
Soft White No. 1	2.00	@	2.10
Flat Stock—			
Stitchless	.95	@	1.05
Over issue Mag	.95	@	1.05
Solid Flat Book	.85	@	.95
Crumpled No. 1	.65	@	.75
Solid Book Ledger	1.50	@	1.65
Ledger Stock	1.05	@	1.15
New B. B. Chips	.30	@	.35
Manilas—			
New Env. Cut	1.65	@	1.75
New Cuttings	1.20	@	1.30
Print	Nominal		
Bogus Wrapper	.40	@	.50
Container	Nominal		
Old Kraft Machine—			
Compressed bales	1.25	@	1.35
News—			
No. 1 White News	1.25	@	1.30
Strictly Overissue	.70	@	.75
Strictly Folded	.25	@	.30
No. 1 Mixed Paper	.45	@	.55

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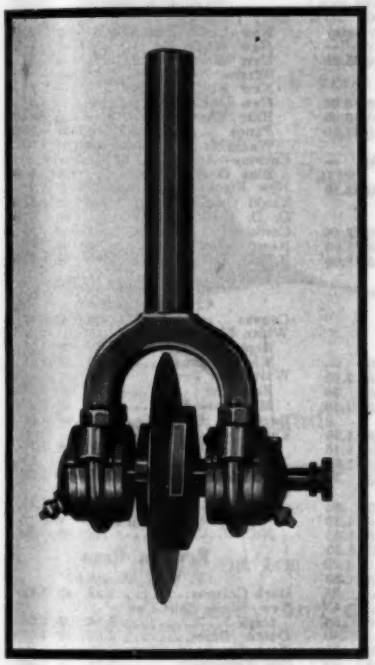

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Twines

(F. o. b. Mill)

Cotton—			
B. C. 18 basis	.20	@	.22
No. 1	.20	@	.22
No. 2	.19	@	.20
No. 3	.17	@	.18
A. Italian, 18 basis	.36	@	.37
Flaxseed Jute—			
Dark, 18 basis	.18	@	.20
Light, 18 basis	.20	@	.22
Jute Wrapping, 3-6 Ply—			
No. 1	.15½	@	.16½
No. 2	.15	@	.16
Tube Rope—			
4-ply and larger	.09¼	@	.09½
Fine Tube Rope—			
4-ply	.11¼	@	.11½
3-ply	.14¼	@	.14½
2-ply	.14¼	@	.14½
Paper Makers Twine	.08¼	@	.13½
Box Twine, 2-3 ply	.14¼	@	.14½
White Hemp	.13¼	@	.16½
Java Sisal—			
No. 1 Basis	.11½	@	—
No. 2 Basis	.10½	@	—
New Zealand Sisal	.11½	@	—
Sisal Lath Yarn—			
No. 1	.13½	@	.15½
No. 2	.11½	@	.13½
Manila Twine	.24½	@	.29½

CHICAGO

Paper

(F. o. b. Mill)

Rag Bond	.12	@	.50
Water Marked Sulphite Bond	.06½	@	.15
Sulphite Bond	.05½	@	.15
Superfine Writing	.18	@	.—
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¼	@	.06¼
No. 1 S.&S.C. Book	.06¼	@	.07¼
No. 2 S.&S.C. Book	.05¼	@	.06½
Coated Book	.07	@	.12
Coated Label	.07	@	.08½
No. 1 Manila	.04½	@	.05½
No. 1 Fibre	.04½	@	.05¼
No. 2 Manila	.04½	@	.04¾
Butcher's Manila	.03¼	@	.03¾
No. 1 Kraft	4.75	@	5.00
Southern Kraft	3.88	@	4.25
No. 2 Kraft	3.88	@	4.25
Wood Tag Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03¼
Manila Tissue	.05¾	@	.07
White Tissue	.07	@	.09
(Delivered Central Territory)			
News, per ton—			
Rolls, contract	41.00	@	—
Sheets, open	46.00	@	51.00
Boards, per ton—			
Plain Chip	46.50	@	—
Solid News	50.00	@	—
Manila Lined Chip	55.00	@	—
Patent coated	65.00	@	—
Container Lined—			
85 Test, per 1000 sq. ft.			1.70
100 Test, per 1000 sq. ft.			1.85

Old Papers

(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope cuttings	1.70	@	2.00
No. 1 Hard White	1.40	@	1.65
No. 1 Soft White	1.25	@	1.50
Ledger & Writings	.70	@	.80
Solid Books	.60	@	.70
Blanks	1.00	@	1.05
Krafts	.80	@	.90
New Kraft Cuts	1.20	@	1.30
Manila Env. Cuts	1.25	@	1.30
Ex. No. 1 Manila	.90	@	1.00
Print Manila	.30	@	.35
Overissue News	.60	@	.70
Old Newspapers—			
No. 1	.50	@	.55
Mixed Papers—			
No. 1	.30	@	.35
Roofing Stocks—			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper

(F. o. b. Mill)

Bonds	.04	@	.40
Ledgers	.06	@	.40
Writings—			
Superfine	.10	@	.18
Extra Fine	.15	@	.26
Fine	.15	@	.26
Fine, No. 2	.10	@	.25
Fine No. 3	.05½	@	.18
Book, M. F.	.04¾	@	.07
Book, S. S. & C.	.05	@	.07½
Book, Coated	.06	@	.16
Coated Lithograph	.06	@	.11
Label	.07	@	.11
No. 1 Jute Manila	.06	@	.10
Manila Sul., No. 1	.03	@	.06
Manila No. 2	.03	@	.05
No. 1 Kraft	.05¼	@	.06½
No. 2 Kraft	.03¾	@	.05
Southern Kraft	2.75	@	4.00
Common Bogus	.03	@	.04½
(Delivered Philadelphia)			
News Print Rolls	46.00	@	55.00
Straw Board	40.00	@	45.00
News Board	50.00	@	—
Chip Board	45.00	@	—
Wood Pulp Board	70.00	@	85.00
Binder Boards—			
No. 1, per ton	75.00	@	80.00
No. 2, per ton	70.00	@	75.00
Carload lots	65.00	@	70.00
Tarred Felts—			
Regular	32.25	@	34.25
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.95	@	2.10
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply	2.00	@	2.21

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.03½	@	.04
New White, No. 2	.02¾	@	.04
Light Silesias	.02¾	@	.03
Silesias, No. 1	.03	@	.03½
Black Silesias, soft	.02½	@	.03
New Unbleached	.05	@	.05½
Washable, No. 1	.01¼	@	.02
Blue Overall	.03¾	@	.04
Cottons—According to grades—			
Washable, No. 2	.02½	@	.03
New Blue	.01¾	@	.03
Fancy	.01¾	@	.03
New Black Soft	.02	@	.04
New Light Seconds	.01¾	@	.02
New Dark Seconds	1.50	@	1.75
Khaki Cuttings—			
No. 1 O.D.	.03	@	.04
No. 2 Mixed	.03	@	.04
Corduroy	.02	@	.03
New Canvas	.03½	@	.04½
New Black Mixed	.02½	@	.03½

Domestic Rags (Old)

White No. 1—			
Repacked	2.50	@	3.50
Miscellaneous	1.75	@	2.25
M. G.	3.00	@	3.75
Thirds and Blues—			
Miscellaneous	1.00	@	1.50
Repacked	1.50	@	2.00
Black Stockings (Export)	2.00	@	3.50
Roofing Stock—			
Foreign No. 1	.50	@	.75
Repacked	.70	@	.85

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.25	@	1.50
Domestic	1.50	@	1.75
Manila Rope	2.00	@	2.25
Sisal Rope	1.25	@	1.50
Mixed Rope	1.00	@	1.10
Scrap Burlaps—			
No. 1	1.25	@	1.50
No. 2	.80	@	1.00
Wool Tares, heavy	2.75	@	—
Mixed Strings	1.15	@	1.25
No. 1 New Light Burlap	2.25	@	2.50
New Burlap Cuttings	2.00	@	2.25

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	2.25	@	2.30
No. 2 Hard White	2.00	@	2.10
No. 1 Soft White	2.05	@	2.10
No. 2 Soft White	1.50	@	1.60
No. 1 Mixed	.95	@	1.00
No. 2 Mixed	.75	@	.80
Solid Ledger Stock	1.50	@	1.60
Writing Paper	1.25	@	1.50
No. 1 Books, heavy	.90	@	1.00
No. 2 Books, light	.70	@	.80
No. 1 New Manila	1.20	@	1.50
No. 1 Old Manila	.85	@	.90
Print Manila	.75	@	.80
Container Manila	.65	@	.70
Old Kraft	1.00	@	1.10
Common Paper	.35	@	.40
No. 1 Mixed Paper	.40	@	.45
Straw Board Chip	.40	@	.45
Binders Board Chip	.40	@	.45
Corrugated Board	.60	@	.70
Overissue News	.60	@	.65
Old Newspapers	.40	@	.50

BOSTON

Paper

(F. o. b. Mill)

Ledgers—			
Sulphite	.06	@	.12½
Rag Content	.12	@	.30
All Rag	.36	@	.52½
Bonds—			
Sulphite	.05½	@	.11
Rag Content	.12	@	.40
All Rag	.36	@	.65
Writings	.06½	@	.20
Superfines	.11	@	.31
Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08½	@	.18
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¼	@	.06¼
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.04¾	@	.05
No. 2 Kraft	.03½	@	.04¼
(F. o. b. Boston)			
Southern Kraft	.03½	@	.04¼
(F. o. b. destination in carload lots, f. o. b. mill in less than carload lots.)			
Common Bogus	.02	@	.02¾
(Delivered New England points)			
News Print, rolls	44.50	@	—
Straw Board, rolls	.009	@	35.00
Straw Board in Sheets, basis 35s to 70s	—	@	40.00
Filled News Board	45.00	@	50.00
Chip Board	42.50	@	47.00
Chip Board (Creasing)	45.00	@	—
Single Manila Lined Chip	52.50	@	62.50
Single White, Patent Coated News Board—Bender	62.50	@	72.50
Wood Pulp Board	70.00	@	75.00
Binder Boards	62.00	@	75.00

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	2.40	@	—
No. 1 Soft White	1.75	@	2.00
No. 2 Mixed	.75	@	.80
Solid Ledger Books	1.40	@	1.50
Overissue Ledger Stock	1.15	@	1.30
Mixed Ledgers	1.00	@	1.10
No. 1 Books, heavy	.90	@	1.00
No. 1 Books, light	.65	@	.75
Crumpled Stitchless Book Stock	.50	@	.60
Manila Env. Cuttings	1.25	@	1.30
No. 1 Old Manila	.95	@	1.05
White Blank News	1.20	@	1.30
No. 1 Kraft	1.15	@	1.20
Manila	.75	@	.80
No. 1 Mixed Papers	.20	@	.25
Print Manila	.40	@	.45
Overissue News	.55	@	.60
Old Newspapers	.35	@	.40
Box Board Chips	.32½	@	.35
Corrugated Boxes	.35	@	.40
Screening Wrappers	.60	@	.70

Bagging

(F. o. b. Boston)

Manila Rope—			
Foreign	—	@	2.25
Domestic	—	@	2.50
Transmission Rope	1.60	@	—
Mixed Strings	—	@	.60
Jute Rope	1.35	@	—
Jute Carpet Threads	.65	@	.70
Gunny No. 1—			
Foreign	1.50	@	—
Domestic	1.20	@	1.30
Bleachery Burlap	3.00	@	3.25
Scrap Burlap	1.15	@	—
Scrap Sisal	1.25	@	1.35
Scrap Sisal for shredding	1.25	@	1.35
Wool Tares, heavy	—	@	1.25
New Burlap Cuttings	1.35	@	1.60
Australian Wool Pouches	2.25	@	2.50
Heavy Baling Bagging	1.40	@	1.50
Paper Mill Bagging	.90	@	1.10
Bagging No. 2	.40	@	.50

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.02	@	.02¼
New White No. 1	.06½	@	—
New White No. 2	.04½	@	.05
Silesias No. 1	.04	@	—
New Black Silesias	.02½	@	.03
New Unbleached	.07	@	.07¼
Blue Cheviot	—	@	4.65
Fancy	—	@	.02½
Washable	.02¼	@	—
Cottons—According to grades—			
Blue Overalls	—	@	.03½
New Black, soft	.04	@	.04½
Khaki Cuttings	.03	@	.03¼
O. D. Khaki	.03	@	.03¼
Corduroy	.01¾	@	.02
New Canvas	—	@	.05
B.V.D. Cuttings	—	@	.06¼

Domestic Rags (Old)

(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	3.00	@	3.50
Miscellaneous	2.00	@	2.25
White No. 2—			
Repacked	2.00	@	2.25
Miscellaneous	2.00	@	2.75
Twos and Blues	1.25	@	1.50
Thirds and Blues			
Repacked	1.10	@	1.25
Miscellaneous	.85	@	.90
Black Stockings	2.25	@	2.50
Roofing Stock			
No. 1	1.20	@	1.25
No. 2	.80	@	—
No. 3	.65	@	.70

Foreign Rags

(F. o. b. Boston)

Dark Cottons	1.25	@	1.40
New White Shirt Cuttings	5.50	@	6.00
Dutch Blues	2.00	@	2.50
New Checks & Blues	2.50	@	3.00
Old Fustians	1.55	@	1.60
Old Linsey Garments	1.40	@	1.50

TORONTO

Paper

(F. o. b. Mill)

Sund—			
No. 1 Sulphite	.10¼	@	—
No. 2 Sulphite	.08½	@	—
No. 1 Colored	.10¼	@	—
No. 2 Colored	.09	@	.10
Ledgers (sulphite)			
Ledgers, No. 1	.34½	@	—
Ledgers, No. 2	.25½	@	—
Writing	.09	@	.09½
Book—			
No. 1 M. F. (Carloads)	6.20	@	—
No. 3 M. F. (Carloads)	5.70	@	—
No. 4 M. F. (carloads)	4.75	@	—
No. 1 S. C. (carloads)	6.65	@	—
No. 3 S. C. (carloads)	6.20	@	—
No. 4 S. C. (carloads)	5.30	@	—
No. 1 Coated and Litho	12.00	@	—
No. 2 Coated and Litho	10.50	@	—
No. 3 Coated and Litho	9.50	@	—
Coated tinted	14.00	@	—
Wrapping—			
Rag Brown	4.25	@	—
White Wrap	2.32½	@	—
"B" Manila	4.75	@	—
No. 1 Manila	5.25	@	—
Fiber	5.25	@	—
Kraft, M. F.	5.75	@	—
Kraft No. 2	5.25	@	—

(F.O.B. Cars Toronto)

News, per ton—			
Rolls (contract)	45.50	@	—
Sheets	50.50	@	—

Pulp

(F. o. b. Mill)

Ground Wood	18.00	@	20.00
Sulphite easy bleaching	40.00	@	—
Sulphite, news grade	38.00	@	—
Sulphite, bleached	50.00	@	55.00
Sulphate	50.00	@	—

Old Waste Paper

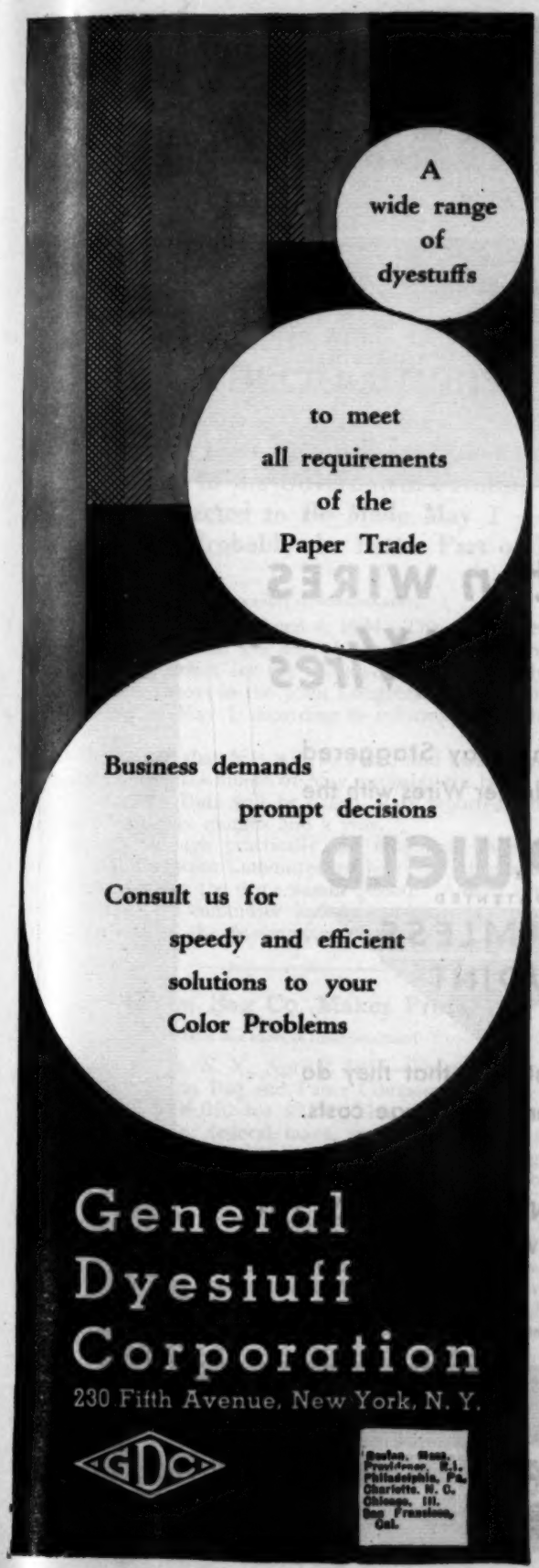
(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	2.00	@	2.10
Soft White	1.60	@	1.90
White Blk. News	1.25	@	1.50
Book and Ledger—			
Flat Magazine and Book Stock (old)	.90	@	1.00
Light and Crumpled Book Stock	.80	@	.90
Ledgers and Writings	1.00	@	1.05
Manilas—			
New Manila Cut	1.25	@	1.50
Printed Manilas	.70	@	—
Kraft	1.25	@	1.50
News and Scrap—			
Strictly Overissue	1.00	@	—
Strictly Folded	.70	@	—
No. 1 Mixed Paper	.60	@	—

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.05¼	@	.05½
Fancy Shirt Cuttings	.02¼	@	.03¼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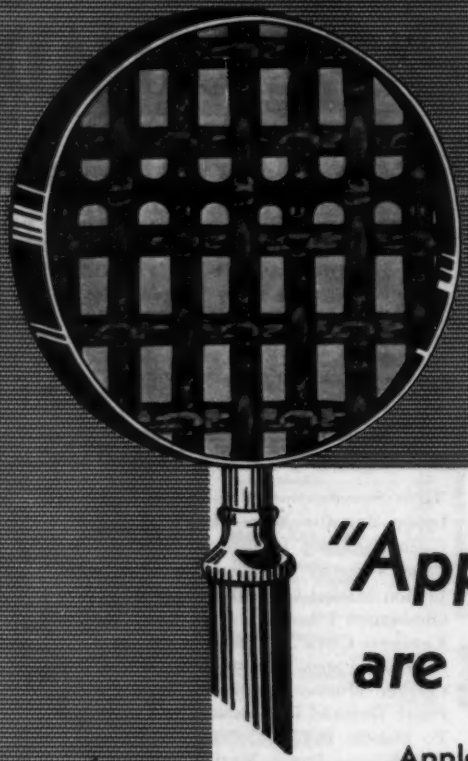

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